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ABSTRACT

This volume offers nine papers on higher education research in Maryland all of which were presented at annual meetings from 1990 through 1993. The following papers are included: (1) "The Geo-Demographic Approach to Student Recruitment: The PG-TRAK90" Lifestyle Cluster System" (Karl Boughan); (2) "Evaluating College Services: A QUEST for Excellence" (Barbara B. Livieratos and Benay C. Leff); (3) "Implementing An Information Infrastructure for Enrollment Management" (Craig A. Clagett and Helen S. Kerr); (4) "Institutional Effectiveness: Designing Systems to Promote Utilization" (Ronald C. Heacock); (5) "Effective Institutional Research: Obstacles and Solutions" (Robin B. Huntington, Craig A. Calgett); (6) "Surveys for College Guidebooks: A Guide to Guide Usage" (Robin B. Huntington and Nancy L. Ochsner); (7) "The Need for Public Colleges and Universities to Redefine Their Relationships with State Government" (Edward T. Lewis); (8) "Networks for Success: Using BITNET and Internet in Institutional Research" (Merrill Pritchett); and (9) "Milestones and Memories: A History of MdAIR" (Robin B. Huntington). Most of the papers include references. (JB)

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FOREWORD

The Maryland Association for Institutional Research is proud to present Volume II of ***Maryland 2000, Journal of the Maryland Association for Institutional Research***. The journal chronicles a sample of the papers and presentations delivered during previous annual meetings and provides evidence of the advanced ideas that researchers and planners contribute to their institutions. The journal is addressed not just to those engaged in institutional research but also to presidents, members of governing boards, to state higher education agencies, and to others concerned with higher education.

A key function of MdAIR is to supply information of a variety of kinds to its membership. ***Maryland 2000*** provides access to significant publications by association members. Not only does an individual member of MdAIR benefit from participating in writing and speaking about his or her profession but from reading about what others have done. Hopefully these opportunities provided by ***Maryland 2000*** will increase members' participation and service in contributing papers to the annual meeting and in fostering the growth of the association.

Gathered in this journal are discussions of institutional research activities by leading practitioners within the state. It is a volume not only to learn from but to stimulate the imagination and show pathways to new techniques. As you read through the journal, finding articles on such topics as student recruitment, information infrastructure, surveys for college guidebooks, and college relationships with state government, you will come away with a deeper understanding and appreciation of the diverse nature of our profession.

As you know, a publication of this magnitude is always highly cooperative. We thank the great group of authors for their excellent papers. Foremost recognition is due to Craig Clagett and Robin Huntington for editing the journal. Thanks are also due to Pat Diehl for her desktop design and production of the journal, and to Washington College for providing the transcript of Dr. Lewis's keynote address from the 1992 conference.

Paul Davalli
President, MdAIR

The Geo-Demographic Approach to Student Recruitment: The PG-TRAK^{90}© Lifestyle Cluster System

KARL BOUGHAN
Prince George's Community College

Fourth MdAIR Conference
November 9, 1990

Introduction

Like many other two-year public institutions since the late 1980s, Prince George's Community College has found itself in a complex of enrollment-related difficulties: rising costs, declining public financial support, a stable FTE trend line and the resulting need to increase student-generated revenue. In response, the College decided to end its reliance on untargeted mass mailings of class schedules and high school site visitation and to move toward a modern market segment approach to student recruitment. Unfortunately, commercial marketing systems proved simply unaffordable. Unwilling to abandon its decision, PGCC explored a "roll your own" solution.

Thus PGCC's Office of Institutional Research and Analysis came to design PG-TRAK^{90} © – our very own neighborhood lifestyle cluster system. It was modeled upon Claritas Corporation's national geo-demographic analysis system PRIZM©, but departed from this standard by emphasizing educational marketing measures and by using an exclusively County database. This paper discusses PG-TRAK^{90}'s geo-demographic underpinnings and development and shares some of our main findings from a cluster market analysis of the County population and College student body.

What is Geo-Demographic Analysis?

"Geo-demography" was pioneered in the 1970s by former Census Bureau statistician Jonathan Robbin, who went on to found Claritas Corporation. The geodemographic approach to marketing begins with the insight that "birds of a feather flock together." That is, people sharing similar demographic, socio-economic and life-cycle attributes, cultural and political attitudes, and patterns of social and consumer behavior—in short, lifestyle—tend to live near each other and create roughly homogeneous neighborhoods. Thus, one can indirectly but effectively market individuals by marketing whole neighborhoods, once a typology of neighborhoods has been worked out and the market analyzed by neighborhood type.

The Census Bureau equivalent of "neighborhood" is Census tract. In these computer-driven days, it is a relatively easy and inexpensive matter to append tract codes to the addresses in customer lists and to market analyze such lists by Census tract. If for a certain market territory (e.g., Prince George's County) tracts have been sorted into a geo-demographic "lifestyle" typology of neighborhoods, then tract analysis equals analysis by lifestyle clusters of neighborhoods. Cluster analysis sets up the marketer for targeting analysis. (Which clusters have been the best past performers? Which ought to be performing better given the nature of the product/service?) This leads readily to message development. (Which messages will be most motivating given the particular lifestyles of targeted clusters?) There remain only target location and access. Geo-demographics shines here too, because prospective customer addresses and phone lists selected by tract are easily obtainable from list brokers.

PG-TRAK^{90}: Development and Operation

PG-TRAK^{90} is a full-featured geographic marketing system, capable of all of the above, only customized to maximize educational marketing objectives within a restricted geographic locale. To create it, the Office of Institutional Research and Analysis obtained U.S. Census Bureau file STF-1 and STF-3a containing over 200 demographic, housing and life-cycle variables for every one of the 172 tracts making up Prince George's County. These data were re-formatted into marketing-style indicators and subjected to a statistical sorting technique known as cluster analysis. The procedure groups individual cases into a set of "clusters" according maximum similarity across all indicators within each cluster, but also maximum indicator dissimilarity across all clusters.[1] The last step was minor re-organization of the raw cluster results to highlight cluster characteristics most pertinent to educational marketing.

The result was the emergence of a typology of Prince George's County neighborhoods (tracts) sorted into 22 clusters, which will be described in the next section. PG-TRAK^{90} can be looked at as a pre-established segmentation of the County into 22 standing markets, the basic needs and motivations of which have already been worked out. Households with potential new students can be efficiently reached by targeting only those cluster markets believed rich in the sort of possible enrollees sought, and by mailing/phoning a quota of households within them. Mail/phone lists can be easily acquired from commercial list brokers whose data bases typically append Census tract codes to each household address and phone number. Furthermore, the messages and scripts used in direct contact can be custom-tailored for maximum appeal to each targeted cluster since each incorporates a well understood lifestyle.

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[1] Technically, we used SPSS/PC+'s cluster analysis program with squared Euclidean distance measures and Ward's approach to agglomeration.

Determining which "clusters-in-the-County" to target in the future depends upon an analysis of the "clusters-in-the-student-body" and their past behavior. To accomplish this, PG-TRAK^{90} maintains a second database consisting of a list of almost 100,000 of PGCC's students (all those taking at least one course during the fiscal years 1985-1990) which has been tract-encoded and sorted by PG-TRAK^{90} cluster. This provides us with a customer base cluster system exactly paralleling the County cluster system. By analyzing the cluster-coded list (now being updated to include all students through Spring 1993) we can establish which clusters historically have provided disproportions of students of whatever personal characteristic or by whichever academic category.

Then, we can plan a rational market stimulation program to increase the numbers of the desired type by contacting County households only from those high performing clusters. This is the "market inflation" strategy of targeting. Or under certain circumstances we might find it better to target those poorer performing clusters whose lifestyle characteristics suggest an unrealized potential. This is the "market broadening" approach. Whichever strategy is selected, PG-TRAK^{90} allows the actual selection of household targets to be based on a precise analysis of the existing customer base. The main body of this report presents examples of just this sort of analysis.

Finally, for added user convenience, the 22 **lifestyle clusters** basic to the system were re-aggregated into fifteen more general **cluster blocks** which in turn were organized into seven broad **geo-demographic zones**. This arrangement clarifies the meaning of each cluster by contextualizing it within the overall sociology of the County. It also has the advantage of establishing ready-made cluster aggregations for those marketing applications needing less precision or utilizing cross-cluster message groups. In fact, to save space and words, we will take advantage of this tier feature by reporting cluster results in the rest of this paper exclusively at the cluster block (CB) level.

Clusters-in-the-County and Clusters-in-the-Student Body

The great diversity of Prince George's population is reflected in the results of our cluster analysis of the demographic, economic and housing data of the county's 172 Census tracts. Fully twenty-two distinctive neighborhood clusters emerged. Table 1, below, provides capsule descriptions of the cluster results, for convenience at the more abbreviated 15-unit cluster block level. The table also displays how the county's 258,011 households actually divide up by cluster blocks:

Zone	Cluster Block Abbreviated Descriptions and Percentage Household Shares (County = 258,051 Households)		Percent County Households
Upscale Outer Suburbs 15.6%	B01 - Exurban Dream	Mostly white, upscale exurbs/Business executives predominate/Many "Empty Nest" families/Large lots	11.3%
	B02 - Black Enterprise	Very upscale majority black suburbs/New high value tracts/Federal workers common/ Large families	4.3%
Midscale Central Suburbs 18.6%	B03 - Beltway Havens	Aging, mostly white families in nice but older tracts off I-95/High incomes, elite blue collars/ Few college grads	4.7%
	B04 - New Collar Condos	Singles, new families in apts. and condos/ Professionals, technicians, entry level incomes/ New hi-tech firms	13.9%
Low Midscale Central Suburbs 9.8%	B05 - Black Middle America	Mostly large black families in median tract housing off I-95/Average incomes, education, jobs/Gov't workers	9.8%
Low Midscale Rural 9.0%	B06 - Rural Development	Large families, modest tract housing in developing rural areas/Well-paid lower white and upper blue collars	8.1%
	B07 - Fort George	Military Installations/Barracks Quarters	0.9%
Upscale Inner Suburbs 4.3%	B08 - Cosmopolitans	Inner-suburb renting upscale professionals/ "Bohemian" areas, white majority but many Blacks, Asians, Latinos	3.4%
	B09 - Asians Plus	One-third Asian Immigrant/Below average income but highest percent college grads and grad students/Young apt. dwellers	0.3%
	B10 - Town and Gown	Mostly higher educational institutions and adjacent neighborhoods/Large student dormitory population	0.6%
Low Midscale Inner Suburbs 10.4%	B11 - Minority Comers	Black renting singles, new families/Lower white and upper blue collar entry level/ Many in college, job training	6.0%
	B12 - Old P.G. County	Lower midscale mix of renting young single and home-owning elderly whites/Old inner-suburban housing stock	4.4%
Downscale Inner Suburbs 32.4%	B13 - Blue Collar Blacks	Mostly low young black renters/Steady but low paying blue collar jobs/Many children, female-headed households	15.5%
	B14 - Afro-Latin Mix	Inner-suburban Mix of growing young black, Hispanic families/Little income, education/ Some home-owning	7.1%
	B15 - Minority Struggle	Solidly black inner-suburbs/Unmarried singles with children modal family/Significant unemployment, poverty	9.8%

Table 1

The single largest CB proved to be Blue Collar Blacks (15.5 percent), together with Afro-Latin Mix and Minority Struggle, one of three downscale mostly African-American inner-suburban segments which together define around 32 percent of all households. Socio-economically balancing these were three mid-to-upscale minority CBs (Black Enterprise, Black Middle America, Minority Comers) which together include about 20 percent of all households. In fact, one of them—Black Enterprise—led all PG-TRAK^{90} clusters in terms of median household income and percent white collar workers. These prosperous black neighborhoods make Prince George's practically unique among U.S. counties: majority non-white but also essentially middle class suburban in character.

The second largest CB turned out to be New Collar Condos (13.9 percent), one of four mostly white central suburban/exurban segments (also including Exurban Dream, Beltway Havens and Rural Development—38 percent, collectively). The numerical strength of New Collar Condos reflects the County's participation in the national economic shift to hi-tech service jobs. But the strong presence of the other three shows that the traditional white collar/white race suburbs are still well represented here. Also, on the margins of this grouping is Fort George (0.9 percent), a cluster of military families centering on Andrews Air Force Base.

Lastly, our clusterization detected an interesting miscellany of inner-suburban neighborhood types. The mostly white inner-suburbs were represented by the culture-oriented, sophisticated renters of the Cosmopolitan cluster block (3.4 percent), the student dormitory dwellers of Town & Gown (0.6 percent) and the remnants of the yesteryear's white blue collar suburbs in Old P.G. County (4.4). And, following the national demographic trend, two clusters emerged (Afro-Latin Mix and Asians Plus) which house a discernable and growing proportion of Third World immigrants.

These then are Prince George's Community College's standing educational submarkets. How well has PGCC been doing drawing students from across this demographic kaleidoscope of populations? Figure 1 helps us to an answer by providing matched comparisons of the proportional weights of the clusters both in-the-County and in-the-student body. Student cluster percentages are derived from an analysis of a database including all 1984-1990 PGCC course-takers, both credit and non-credit. Clusters are shown rank-ordered high/low according to County cluster household percentage. The story told here is clear. There exists an excellent rough-and-ready fit between student cluster and County cluster percentages.

This is very welcome news from a college mission perspective. Community colleges historically were established to "democratize higher education." Providing access to college-level training to all groups—poor as well as rich, non-white as well as white—is our main educational *raison d'etre.* And in this, PGCC seems to be succeeding admirably. At least for the last half-decade, our student body has been a fairly undistorted reflection of our service area's demography.

But for the educational marketer, the finding that PGCC has been doing "pretty good" everywhere is not very helpful. The marketer needs information on the relative "underages" and "overages" in product or service sales to various market seg-

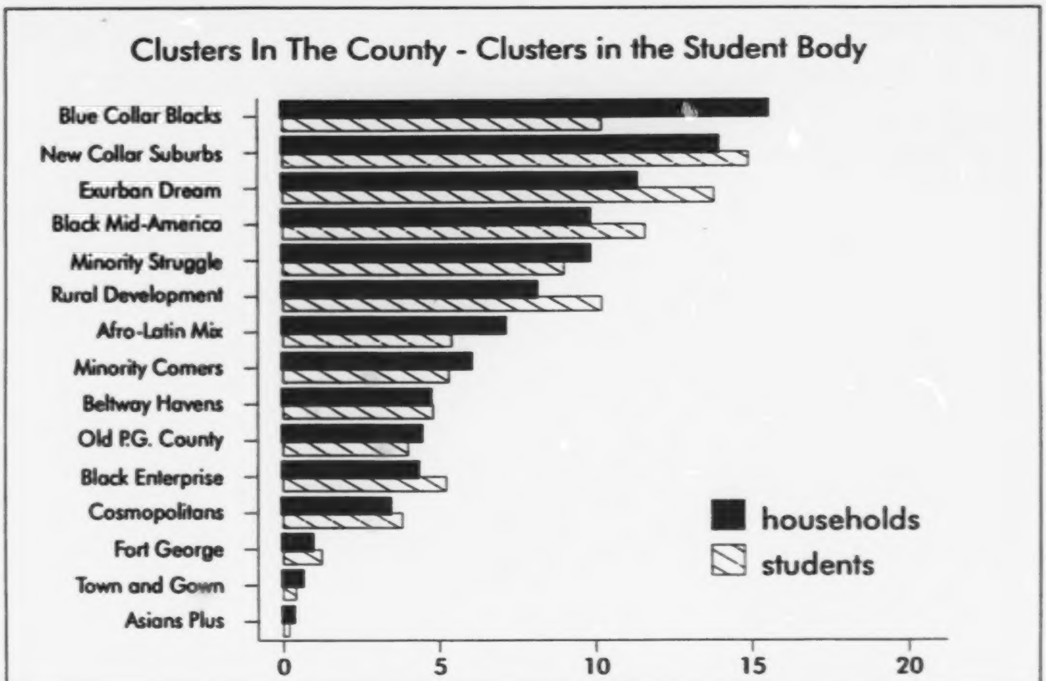

Figure 1

ments in order to identify past marketing failure and future marketing opportunities. Even small differences can add up to major marketing insights.

A prime concept in marketing is **penetration**, the proportional extent to which one's product or service has actually sold in a targeted market (usually a set of demographically defined households). Using penetration measures is the standard way of exploring market overages and underages.

Figure 2 is a rearrangement of Figure 1's data with penetration measurement in mind. Instead of two sets of bars representing cluster-by-cluster percentages in the County and PGCC student body, there is only one set which directly relates a cluster's student numbers as a percentage of its total County household numbers. By assuming one student per household (safe in vast majority of cases), this percentage then becomes equivalent to PGCC's market penetration of that cluster — i.e., For what proportion of Cluster X's households has PGCC provided at least one college course experience from 1984-1990?[2]

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[2] Three clusters have been dropped in this figure. Asian Plus and Town & Gown are too small to generate stable penetration estimates. And Fort George is a special marketing case: PGCC maintains a reserved extension center on the Air Force Base for training programs tailored to military career needs.

Figure 2 also shows an extra set of bars representing the rating of each cluster on a socio-economic status scale.[3] We added this data because of a suspicion that whatever County-to-student cluster biases our penetration analysis discovered might be social class related.

PGCC's five year County-wide household penetration rate measured in numbers of credit/non-credit students per household was .34, or put another way, upwards of over a third of all County households sent PGCC a student of some description between 1984-1990. Individual cluster penetration rates varied widely around this mean, from a high 43 percent in Rural Development (County Index 125)[4] down to only 22 percent (Index 66) in Blue Collar Blacks. Such a broad variation is only to be expected, but what might be considered unexpected is how little the cluster

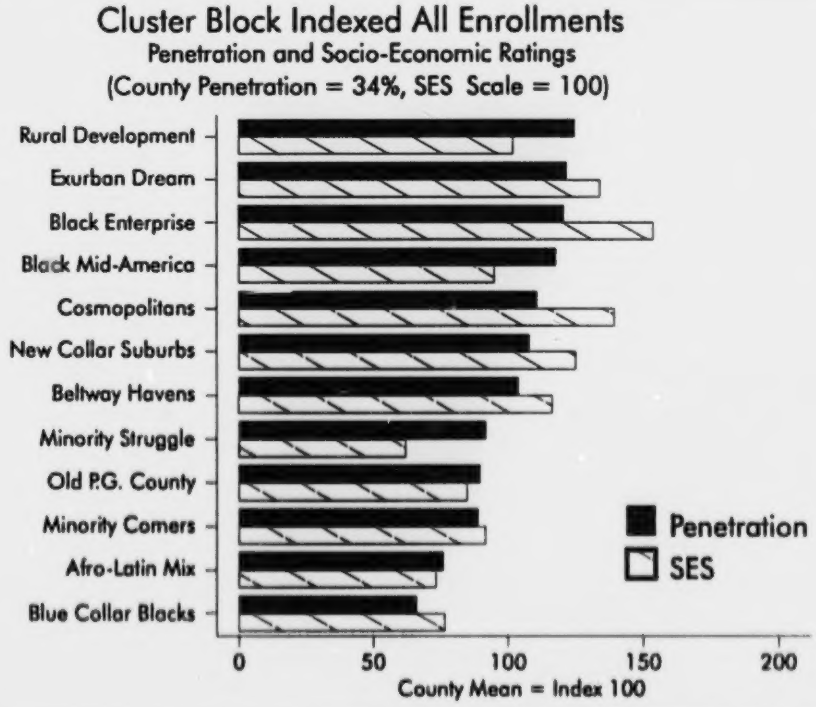

Figure 2

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[3] The SES Scale was built out of original Census tract z-scores for medium income, percent white collar employed and percent college graduate, with County-wide results set to 100.

[4] "Indexing" unit data to the absolute value of a total market is the typical way of reporting statistics in the marketing world since gauging relative tendencies among a set market segment is generally considered more important than fixing submarket absolute values. The formula for indexed values is simple: I = 100* (segment value/market value). This sets the index value as a percentage of the reference value. Hence, one could interpret a 125 index value for Rural Development penetration rate as "125 percent of the County's 34 percent rate."

rank-ordering of Figure 2 resembles that of Figure 1. In fact, the cluster we saw rating among the highest in terms of student body proportional share we now find ranking the very lowest on PGCC cluster market penetration!

The SES bars help us to understand what is going on here. Figure 2 shows a clear correlation between SES scale rating and penetration—in general, the more upscale the cluster the higher the penetration level ($r^2 = .51$). This makes good sociological sense; study after study has concluded that college orientation is strongly and positively linked to social status. But how can this be, given our earlier discovery that, cluster-wise, PGCC's student body closely resembles the general population of the County? Is PGCC succeeding in its basic educational mission or isn't it?

To answer this question, we must glance back at Figure 1. There we quickly see that while the student cluster-County cluster parallel was good, it was not perfect. Upscale clusters did tend to show somewhat larger student proportions than County proportions (e.g., Black Enterprise: students 5.2%, County 4.8%) while for downscale clusters the reverse was true (e.g., Blue Collar Blacks: students 10.2%, County 13.8%). What we learn from Figure 2 is that these seemingly small discrepancies systematically derive from large SES-linked PGCC penetration rate differences among the County clusters. It is just that the penetration rate differences we have discovered prove insufficiently great to seriously compromise educational access and to convert large downscale County clusters into small student clusters and small upscale County clusters into large student clusters. A rough democratic proportionality continues to characterize PGCC's student body despite countervailing market forces.

Nevertheless, the linked social status-educational penetration finding holds outstanding implications for both College basic mission fulfillment and College general marketing strategy, and for ways in which they might be weighed in enrollment management decision-making. Consider the two main approaches to increasing market share we mentioned earlier: market inflation (selling more to the same sort of people who have always bought) and market broadening (selling to new people from groups with historically low purchase rates). In the light of our penetration rate finding, which of these would make the best standing market strategy for PGCC?

- Target the more upscale clusters in student recruitment campaigns. These are the proven disproportional sources of our student body. And they are already oriented toward pursuing higher education so they are primed to respond readily to our appeals.

  (But: Targeting upscale clusters seems educationally elitist. Furthermore, we may already have reached "saturation level" among these groups—penetration rates are not infinitely expandable upwards. And there is the added problem of competition from four-year schools which tend to concentrate their student recruitment efforts here.)

- Target the lower middle and downscale clusters with more vigor. Their past enrollment rates have been low, so among them is where the greatest opportunity for expansion lies. And, we will be reinforcing our basic mission in the bargain.

  (But: Penetration rates among lower scale clusters have been traditionally low **because** these are just the social components which are the least college oriented. Therefore, reaching them effectively will require more effort and resources while the risk of failure will remain high.)

Fortunately, as a practical matter, PGCC will not have to resolve these issues in any "once-and-for-all" sense. Enrollment management decision-making in the real world is not, and should not be, a matter of creating and following a rigid, comprehensive plan governed by a single ideology or institutional objective. The complex nature of the modern community college and its environment requires sensitivity to the diverse needs and expectations of multiple constituencies and the flexibility to adjust to rapidly changing demographic and economic circumstances.

While it should always keep the above "great issues" in mind, PGCC's normal course will lie in identifying specific program areas needing enrollment augmentation and in exploiting concrete opportunities for recruitment of students from particular social components. Whether the College ends up leaning toward a market inflating or market broadening plan will depend upon the evidence of the moment. The great strength of a geo-demographic analysis system like PG-TRAK^{90} is that it can systematically develop the evidence on enrollment needs by program and student type and directly convert its findings into a targeted recruitment campaign. The remainder of this article focuses on practical cluster targeting.

Market Analyzing Student Clusters

Credit vs. Non-credit Course Markets Broadly, community colleges offer two very different types of educational services—credit courses arranged into academic or vocational programs for those seeking formal educational or career-related credentials, and non-credit or "continuing education" courses for those looking only for personal enrichment or occasional, informal skills-upgrading. Are these really two different markets from a demographic perspective? Would a campaign to stimulate "Con Ed" enrollments aim at a different set of households from one hoping to up credit student enrollments?

Credit vs. Non-Credit Cluster Markets
(Indexed Values)

	Credit		Non-Credit	
Cluster Block	Student Household Penetration	Number of Courses per Household	Student Household Penetration	Number of Courses per Household
Exurban Dream	146	128	151	119
Rural Development	140	132	101	119
Black Mid-America	132	129	122	111
Beltway Havens	120	100	123	110
Black Enterprise	114	122	118	122
Fort George	141	214	60	61
New Collar Condos	104	104	122	111
Cosmopolitans	93	81	127	137
Old P.G. County	76	74	100	103
Minority Comers	85	89	77	87
Minority Struggle	79	92	83	92
Afro-Latin Mix	62	65	75	84
Blue Collar Blacks	56	68	52	62
Town & Gown	44	52	77	81
Asians Plus	34	37	79	79
All Clusters (Raw Value)	17.9%	94	19.1%	24

Table 2

The table above shows the results of an analysis of 1985-1990 credit and non-credit students sorted by cluster block. Two measures of customer disproportionality are used. The first is one already encountered—student household penetration, the percentage of households with a member signed up for at least one PGCC course 1985-1990. The second is household course "generation," the mean number of courses per household, a supplementary "volume" measure of service utilization. Individual cluster values are indexed to all-Cluster results.[5]

Our basic finding is that PGCC's established credit and non-credit markets are geo-demographically very similar. The great majority of cluster blocks register either disproportionately high enrollment levels in both credit and non-credit courses (top grouping—conventional upscale suburban) or disproportionately low levels (bottom grouping—mostly minority mid- to downscale inner suburban). Four clusters, however, did show a distinct leaning. Fort George's past enrollments strongly fell on the credit side, a function of the military's policy of subsidizing career-related credit courses only. Three other clusters discernably favored non-credit courses. Two of these feature special concentrations of the late middle-aged and senior citizens, many of who view education as recreation (Cosmopolitans and Old P.G. County), and two of the three (New Collar Condos and Cosmopolitans) are heavily weighted with college degree holders long past their undergraduate days.

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[5] Non-credit student penetration measurement excludes students exclusively enrolled in senior citizens only courses, organization contract courses and special population courses. Similarly, no courses from seniors-only, contract and special population categories were used to calculate non-credit courses per household.

Targeting for Credit Student Recruitment. Community colleges which have a geo-demographic system like PG-TRAK^{90} in place may plan household-targeted credit student recruitment campaigns with the broadest or narrowest of focuses—from stimulating credit enrollment generally (for example, picking the top six clusters in Table 2) down to searching for additional Engineering 101 sign-ons. Once a representative credit student sample has been cluster-encoded, the only limit in target identification is the level of comprehensiveness and detail characterizing the student archive data.

Selected Credit Student
Target Indicators
(Indexed Values)

				Entrance Timing		
Cluster Blocks	**Full-Time Students**	**Transfer/ Occupational Program Ratio**	**Arts & Science Programs**	**High School Graduates**	**2-9 Years After Graduation**	**10+ Years After Graduation**
Exurban Dream	116	128	112	113	84	96
Beltway Havens	137	125	120	117	88	83
Rural Development	102	107	102	115	78	98
Asians Plus	228	187	90	117	57	117
Cosmopolitans	127	133	103	108	86	101
Black Enterprise	100	113	108	108	75	114
Fort George	55	123	110	27	147	182
Town & Gown	98	229	192	58	214	48
New Collar Condos	93	107	92	88	120	99
Old P.G. County	102	111	133	88	119	101
Black Mid-America	89	89	103	105	91	101
Minority Struggle	87	70	85	104	102	90
Afro-Latin Mix	107	92	92	96	114	92
Blue Collar Blacks	95	82	82	89	117	101
Minority Comers	80	97	98	85	114	112
All Clusters (Raw Values)	**14%**	**1.07**	**6%**	**46%**	**28%**	**25%**

Table 3

Table 3 above illustrates the use of just a few of the possible credit target indicators available to PGCC's planners.[6] Those chosen for review here all relate in one way or another to a distinction of prime importance to community colleges – "traditional" vs. "non-traditional" students.

The "traditional student" pattern features starting college immediately upon completing high school, attending with a full-time credit load, majoring in a transfer curriculum as opposed to a vocational one, and usually, although not necessarily, studying the humanities or sciences as opposed to a technical or business subject. On this basis, the prime source of such students in PGCC's recent past have been the conventional white suburbs – here represented by the top grouping of Exurban Dream, Beltway Havens and Rural Development. The second grouping of elite Black Enterprise and the sophisticated, inner-suburban Cosmopolitans and Asians Plus clusters also sent PGCC disproportions of "traditional students," but also proved to be a disproportionate source of adults returning to college for job-related skill upgrading and personal enrichment. The third grouping, too, favored transfer programs and, in two out of three cases, the Arts and Sciences as subject matter; but the disproportionately "delayed entry" students of Fort George, Town & Gown and New Collar Condos (three clusters made up mainly of young adults without children who either worked full-time or studied full-time but not at PGCC) typically attend PGCC on a part-time basis.

With one exception (Old P.G. County, with its own peculiar pattern), the remaining cluster blocks shown in Table 3 were more likely to contribute "non-traditional" than "traditional" students to PGCC's student body. The large family minority clusters Black Middle America and Minority Struggle did tend to send more straight-from-high school students than delayed entry students but proved vocational program oriented. Finally, the poorest source of "traditional" students proved to be the Afro-Latin Mix/Blue Collar Blacks/Minority Comers grouping. These minority neighborhoods feature young singles and starter families. Most PGCC students from the last group were vocationally-oriented working persons out of high school for several years searching for ways to improve their job prospects.

Targeting for Non-Credit Student Recruitment. Geo-demographic-driven student recruitment works equally well on the non-credit side. The only real difference is that there are fewer educational dimensions to measure—few formal programs or curricula and few performance or outcome standards. What remains to be tracked, in the main, is course subject matter popularity. On behalf of PGCC's Continuing Education Division, a few years ago the Office of Institutional Research and Analysis reviewed all non-credit courses given at the College since 1985 and created a forty-fold scheme for categorizing Con Ed offerings by broad subject matter "themes," in effect informal non-credit curricula.

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[6] The target indicators for Table 3 were constructed as follows: "Mostly Full-time" students were those who elected to pursue 12 credit hours or more during at least half of the school terms they attended; the overall 14 percent is lower than the typical PGCC fall semester 25 percent because students' summer terms and terms spent largely on non-regular credit developmental course work were included. The "Transfer/Vocational Program Ratio" was calculated on a cluster block level basis: percent of credit students in any transfer curriculum divided by percent of students in any vocational curriculum. "Arts & Science Students" equals the percent of a cluster block's students signed up for a transfer curriculum within the Arts and Science division. "Entrance Timing" is a three-part percentage variable based upon the number of years after high school graduation a student began attending PGCC; "HS Graduation" — percent before (concurrent students), immediately after or within a year of high school graduation date; "2-9 Years Post" — with a period of between 2 to 9 years after graduation; "10+ Years Post" — ten or more years following graduation.

The table below presents the level of course taking activity by cluster block for a selected set of nine Con Ed course themes, chosen as representative of the whole sorting system: "Lifestyle"—courses on beauty and fashion, cooking, antiques and home decorating, arts and crafts, New Age philosophies and fortune-telling, etc.; "Life Issues"—self-help courses on stress management and addictions, forums on personal and family concerns like sexual identity, parenting, etc.; "Personal Finance"—courses on household accounting, personal investment and tax strategies, etc.; "Small Business Concerns"—courses on small business management, start-up opportunities, legal and tax issues, etc.; "Corporate Management"—courses on corporate managerial strategies and techniques; "Hi-Tech"—courses

Selected Continuing Education Market Indicators

(Indexed Values)

Cluster Blocks	Life Style	Life Issues	Personal Finance	Small Bus	Corp Mgmt	Hi-Tech	New Collar Trades	Office Tech	Traditional Trades/ Crafts
Exurban Dream	146	116	140	114	120	103	139	98	121
Black Mid-America	114	99	102	130	116	116	108	112	104
New Collar Condos	130	96	110	102	101	104	93	95	107
Black Enterprise	95	94	113	147	102	100	99	81	78
Beltway Havens	103	132	119	97	107	96	135	91	128
Asians Plus	158	267	175	70	77	138	127	40	32
Cosmopolitans	109	132	107	68	51	85	80	59	74
Afro-Latin Mix	63	116	60	70	74	91	85	95	108
Minority Comers	67	67	65	73	91	95	83	113	99
Blue Collar Blacks	60	84	78	87	86	103	73	110	77
Minority Struggle	58	99	86	99	94	116	83	185	88
Rural Development	82	76	98	107	117	86	92	63	94
Fort George	64	258	13	22	173	51	118	135	60
Old P.G. County	93	96	69	65	87	82	105	77	97
Town & Gown	75	0	0	33	41	35	151	48	89
All Clusters (Raw percent)	**11**	**3**	**4**	**12**	**8**	**7**	**7**	**11**	**13**

Table 4

on personal computers and computer software, photographic techniques, the technical aspects of film-making, radio and television production; "New Collar Trades" —courses on new technical and lesser professional trades like hospitality services, radiography, etc.; "Office Technology"—secretarial training courses and courses on office management skills like bookkeeping; and "Traditional Trades and Crafts"—both job-oriented and home maintenance courses on plumbing, auto repair, electrical wiring, etc. In Table 4, course theme popularity in a cluster is measured in terms of the percentage of all cluster non-credit enrollments grouped under the theme, indexed to the all-cluster percentage.[7]

Once again we have grouped cluster blocks according to similarities of score across marketing indicators. In the first grouping—consisting of the two elite outer suburban CBs plus the socially striving mid-scale CBs New Collar Condos and Black Middle America—we find above average course-taking for all themes represented in Table 4. But particularly noticeable is the popularity of Lifestyle, Personal Finance, Small Business and Corporate Management offerings among them. The second grouping—two inner-suburban sophisticate CBs plus aging Beltway Havens —shares enthusiasm for Lifestyle courses (adding a special liking for Personal Issues offerings) but parts company with its social class peers in Group I when it comes to the economic themes, showing a high degree of interest in Personal Finance but not in career-related Small Business and Corporate Management courses.

In sharp contrast to both, Group III (all lower mid- to downscale minority CBs) shows almost no interest in either personal enrichment or white collar economic themes. In fact, the only courses drawing significant attention from Group III are those offering secretarial training which are avoided by most other CBs. To us, this is a bit puzzling—not that less middle class students should be less attracted to "Lifestyle" and financial courses but that they should disproportionately forego opportunities to develop work-related knowledge and skills through any courses save those dealing with the office. Even blue collar classes fail to draw Group III's at enrollment rates any greater than those for the upper middle class CBs who probably approach these courses mostly from a do-it-yourself perspective. This may be the revelation of a real marketing opportunity.

The last group presents a miscellany of responses to PGCC non-credit course offerings. Rural Development, the lower midscale exurbs, somewhat resembles entrepreneurial Group I in its disproportionate Small Business and Corporate Management course-taking but manifests no interest in Lifestyle offerings. Fort George and Town & Gown students tend to be drawn to various but different job-related courses while Old P.G. County manifests an average or somewhat below-average interest level in just about everything.

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[7] Excluded from the percentage base are all seniors-only courses, all contracted employee training programs, and all special programs for handicapped children run under the auspices of the Continuing Education division.

Conclusions

As the above targeting exercises indicate, the public does tend to respond to a community college's educational services based upon factors of social class, ethnicity, lifestyle and lifecycle which can be estimated for individual households from data on neighborhood type. Therefore, an institution which has the capability of analyzing its student data files geo-demographically is well positioned to rationalize and systematize its student recruitment activity and to realize real efficiencies and savings through targeted rather than indiscriminate contact operations.

Prince George's Community College is in the process of reintegrating its student recruitment efforts around the principles of modern market segmentation. The new approach will be monitored and implemented using the powerful enrollment management software EMAS^{+} ©.[8] PG-TRAK^{90}, directly incorporated into the segmentation module of the software, will provide the critical market-analytic and contact-targeting component. Trial runs suggest grounds for optimism. One mail brochure pilot project using a cluster identified list of 5,000 County households indicated a 3.4 percent enrollment response rate for targeted households compared with a .3 percent sign-on for non-targeted households.

Any community college servicing a large and diverse local population (roughly 50,000+ households) can benefit from geo-demographic marketing. And the development of a localized lifestyle cluster system for educational outreach is relatively inexpensive and probably within the technical capability of a good many institutional research offices. We hope this report will encourage other schools to roll their own "TRAK^{90}s" and discover the marketing benefits of the geo-demographic way.

This article is a May 1993 revision of the paper presented at the 1990 MdAIR conference.

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[8] Enrollment Management Action System, Version 5.1, The Noel-Levitz Center for Enrollment Management, Iowa City, Iowa.

Evaluating College Services: A QUEST for Excellence

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Introduction

For more than two decades Howard Community College (HCC) has employed various assessment techniques to evaluate the services provided to its faculty and staff by their colleagues within the institution. HCC's original "Services Evaluation" was distributed to every full-time employee and contained more than 100 items to rate. Survey results were, in part, tied to the institutional merit pay program, in that employees often included a potential rating as one measure of outcome in their annual performance plans. With an ever-expanding volume of survey results and an increasingly complex analysis, the effort required to glean meaning from the data was not warranted by the usefulness of the results. By 1985 those issues, coupled with a dwindling response rate, lead to the suspension of the process for approximately three years. During that interim the quest was underway for an evaluation process and an instrument that would better suit the needs of the college community.

In 1988, at a time when Howard Community College was preparing for its ten year reaccreditation, the institution undertook a comprehensive examination of its long-range planning process and the formulation of strategic priorities. The focus developed has been primarily on "Teaching and Learning," "Student Access," "Customer Service," "Valuing Diversity," and "Management Excellence."

As the customer service priority emerged, the college sought to develop a new mechanism that would yield valid and reliable information on the quality of services delivered to full-time and part-time faculty, staff, and students. The institution was eager to adapt or develop a survey instrument that would generate a high response rate, produce useful evaluation data, and would not unduly burden respondents. That this undertaking was worthwhile and could ultimately yield results beneficial to the college was the underlying assumption upon which our efforts were based. In a synthesis of writings on the evaluation of administrative units, Braskamp (1987) said that there was general agreement that evaluation is important, timely, and in the best interests of an institution. He noted that the three most important design considerations are: understanding the context; determining the appropriate emphases; and deciding how comprehensive an evaluation should be.

Efforts were made to identify an existing instrument that could be modified for use at HCC. A study of both business and academic organizations, however, failed to unearth a suitable model. Wilson (1987) has delineated some of the difficulties in evaluating administrative units as compared to academic units and has cited their variability as often being a major obstacle to institution-wide evaluation. At HCC we were quite familiar with that very problem, since our former Services Evaluation had separate criteria for each unit being evaluated and we ultimately became mired in the complexities of administering, analyzing, and presenting the resulting data. A goal in the development of a new instrument was to identify common elements that would be meaningful in evaluating all departmental units. In developing a new instrument and evaluation process, we also kept in mind the general principles outlined by Wilson for evaluating administrative units. These principles included: fairness in both the substance and the procedure of the evaluation; timeliness in satisfying the information needs of those who request the evaluation; and responsiveness or sensitivity to the context and climate in which the evaluation occurs.

A focus group of faculty and staff was convened to help delineate factors considered important in a campus-wide assessment of individual offices. The group recommended inclusion of the following five "generic" elements in the first section of the QUEST ("Quality Evaluation of Service Trends") examining "Quality of Service":

- Responds promptly to requests
- Provides accurate information
- Exhibits helpfulness and courtesy
- Demonstrates flexibility
- Performs functions effectively

Each unit was to be rated on these items according to how often the stated behavior was performed. The five-point scale used ranged from "never" (1) to "always" (5). Respondents were also asked to indicate their frequency of use of each service. User categories were: "often," "occasionally," and "not at all." Ratings of those who never used a given service were excluded from the analysis.

With five generic quality of service items and an overall rating for each college unit, we felt we had the basis of an informative evaluation tool . For units whose findings indicated that a more in-depth evaluation may be desirable, the QUEST Survey could be incorporated into a more comprehensive unit evaluation. Brown (1989) favored a modified self-study for the review of nonacademic units. This relatively lengthy and intensive process might well be the logical follow-up for units whose ratings on the QUEST are consistently low.

In addition to evaluating quality of service, another objective of the new evaluation process was for the college administration to assess the degree to which it was effectively responding to general workplace issues. The second section of the QUEST asks faculty and staff to rate the performance of the Executive Management of the college (defined as the President and Vice Presidents) overall and on eight separate criteria. The response options for each item are keyed to the item being evaluated. For example, to the question, "To what extent are you involved in campus decisions that affect you personally?" the response options range from "no involvement" (1) to "maximum involvement" (5). The third section of the survey instrument is devoted to issues of "Job Satisfaction." It also contains an overall rating and eight items. Again, a five-point scale is used for responses to each item, with one meaning "very dissatisfied" and five signifying "very satisfied."

Characteristics of QUEST Survey Respondents

Characteristics	1990 (N=191) Percent	1991 (N=173) Percent	1992 (N=193) Percent
Employment Status			
Support Staff	53.4	47.4	45.1
Full-time Faculty	23.0	30.6	26.9
Admin. Staff	23.6	20.8	17.6
No Emp. type	0.0	1.2	10.4
Years Employed at HCC			
Less than 1 year	12.6	5.2	5.7
1 - 3 years	22.0	17.3	18.7
4 - 6 years	22.5	26.6	25.4
7 - 10 years	15.7	17.9	15.0
Over 10 years	22.0	23.7	26.9
Unknown	5.2	9.2	8.3
Response Rates			
Support Staff	80.9	59.9	57.6
Full-time Faculty	74.6	82.8	73.2
Admin. Staff	83.3	64.3	73.9
Overall	79.9	67.3	72.0

Table 1

In April, 1990, after a pilot test with the focus group, the instrument was distributed to all full-time and part-time faculty and staff. Since that initial administration, it has not been distributed to part-time faculty, because the responses from that group revealed tremendous disparity with all other respondent categories. This paper presents the results of three years of QUEST data from HCC.

Overview of Survey Results

Survey Respondents. In each of the three years it has been administered, the QUEST Survey has been given during the spring semester. Employee name and unit labels are attached to a memo from the college president encouraging participation in the survey which is stapled to the QUEST Survey. Employees are instructed to remove the memo with their name on it and to complete and return the survey as directed. Overall response rates to the survey (see Table 1 above) have ranged from 67% to 80%. The administrative staff has typically had the highest response rate, and the support staff the lowest. Because of their relatively larger numbers, however, support staff respondents have made up the largest proportion of respondents (from 45% to 53%).

Ratings on Quality of Service. Ratings for each service unit are given on each of five service performance items, as described above. Findings for each of those items are given in detail each year. For purposes of this report, however, the ratings on the five items for each unit have been combined to produce an overall mean for each of the three years (see Table 2). Consistently ranking in the top three are the Testing Center, the Library, and the Bookstore. Also garnering high ratings each year have been the Deans' office staff, Audio Visual Services, and the Print Shop. It will be noted that all scores are relatively high on a five-point scale, and that there is not a great deal of variability in scores from year to year. For those units whose ratings do change, the detail on the five behaviors can show more precisely in which areas improvement has been or needs to be initiated. Faculty members tended to give higher ratings than did support staff or administrators.

Ratings on Executive Management. Comparisons of the ratings from the 1990, 1991, and 1992 QUEST Survey items on Executive Management are shown in Table 3. It should be noted that the second and third years of the QUEST Survey came at times of organizational overhaul (from two comprehensive academic divisions to seven) and during periods of state and local budget cuts. These circumstances are reflected in the ratings given to Executive Management. Ratings on all items related to Executive Management went down between 1990 and 1991, with the overall going from 3.6 to 3.2. Between 1991 and 1992, ratings on all items except one went up, as did the overall rating (from 3.2 to 3.3). The administrative staff consistently gave higher ratings to Executive Management than did the other two employee groups.

Mean Ratings on Services By All Users*

QUEST '90, '91, and '92

Services	QUEST '90 Ratings	QUEST '91 Ratings	QUEST '92 Ratings	'91-'92 Difference
Bookstore	4.6	4.6	4.6	0
Business Office: Accounts Payable	3.9**	4.1	4.1	0
Business Office: Cashiering	**	4.3	4.3	0
Business Office: Payroll	**	4.3	4.3	0
Cafeteria	3.7	3.7	3.8	+0.1
Capa Center/Testing	4.7	4.7	4.7	0
Continuing Education	4.0	4.2	4.1	-0.1
Counseling Services	4.2	4.2	4.2	0
Cutural Arts: Gallery & Theater	4.3	4.2	4.2	0
Deans' Office Staff	4.5	4.6	4.6	0
Development/Alumni Relations	4.1	4.1	4.1	0
Division Faculty: Business/Computer	***	***	4.0	NA
Division Faculty: Communications	***	***	4.0	NA
Division Faculty: Health Sciences	***	***	4.1	NA
Division Faculty: Humanities	***	***	4.2	NA
Division Faculty: Mathematics	***	***	4.3	NA
Division Faculty: Science & Technology	***	***	4.2	NA
Division Faculty: Social Sciences	***	***	4.2	NA
Division Office Staff - BMST	4.2	4.4	4.5	+0.1
Division Office Staff - CHSHSS	4.0	4.2	4.4	+0.2
Faculty Development	4.0	4.0	4.1	+0.1
Financial Aid/Veteran Affairs	4.0	3.9	4.1	+0.2
Information Services: Computer Center	4.2	4.0	4.2	+0.2
Info. Serv.: Microcomputer Services	4.1	3.9	4.1	+0.2
Info. Serv.: Telecommunications	4.1	3.9	4.2	+0.3
LCD: Audio Visual Services	4.5	4.5	4.5	0
LCD: Evening Services	4.1	4.0	4.1	+0.1
LCD: Learning Assistance Center	***	***	4.5	NA
LCD: Library	4.6	4.7	4.6	-0.1
LCD: Student Support Services	4.3	4.3	4.4	+0.1
Personnel/Affirmative Action	4.0	4.2	4.2	+0.2
Physical Education Center	4.1	4.2	4.2	0
Plant Operations	4.1	4.0	3.9	-0.1
Planning & Evaluation	4.4	4.3	4.3	0
President's Office Staff	4.4	4.4	4.4	0
Print Shop	4.5	4.6	4.5	-0.1
Public Relations/Marketing	4.2	4.3	4.2	-0.1
Security	**	3.7	3.7	0
Student Activities	4.1	4.2	4.3	+0.1
Student Services: Admissions	4.1	4.3	4.5	+0.2
Student Services: Records/Registration	3.8	4.2	4.4	+0.2
Television Studio/Video Services	4.3	4.3	4.3	0

* The categories of "Often" and "Occasionally" were combined to create the "User" category for each service.

** The Business Office was listed as one unit on the '90 QUEST, and was broken down into three units on the '91

*** These units were categorized differently on the previous QUEST instruments.

Table 2

Mean Ratings On Executive Management*

Survey Items On Executive Management	1990 (N=191)	1991 (N=173)	1992 (N=193)
Shows Confidence in Campus Personnel	3.9	3.3	3.6
Encourages Creative and Innovative Ideas	3.7	3.2	3.6
Supports and Uses Your Innovative Ideas	3.4	3.0	3.3
Cooperation Existing Across Areas of Campus	3.3	3.1	3.3
Cooperation Existing Within Your Area	4.1	3.9	4.1
Shares Information Needed To Do Your Job	3.6	3.1	3.4
Your Involvement In Decisions That Affect You Personally	3.0	2.6	2.8
Appropriateness of Decisions Affecting Fiscal Resources	3.0	2.9	2.9
Overall Rating On Executive Management	3.6	3.2	3.3

* The numbers given are for the total number of respondents. Item means were calculated based on the number of responses to that item. Missing data were not included in the calculation of the means.

Table 3

Ratings on Job Satisfaction. The first administration of the QUEST Survey gave evidence of a fairly high level of job satisfaction among all employee groups at HCC.(See Table 4). Between 1990 and 1991, however, five of the eight satisfaction items went down. Two that went up were related to the physical environment and personal work space, reflecting moves to new offices. The overall rating on job

Mean Ratings on Job Satisfaction*

Survey Items On Job Satisfaction	1990 (N=191)	1991 (N=173)	1992 (N=193)
Present Position Satisfying Goals and Aspirations	3.8	3.6	3.7
Satisfaction With Job Security Of Present Position	4.1	3.5	3.3
Satisfaction With Salary Received In Present Position	3.2	3.2	2.7
Satisfaction With Resources Available to Carry Out Job	3.6	3.4	3.5
Satisfaction With Way Job Performance Is Evaluated	3.6	3.4	3.6
Satisfaction With HCC'S Merit Pay System	3.1	2.8	2.6
Satisfaction With The Physical Environment	3.4	3.6	3.9
Satisfication With Personal Work Space	3.4	3.7	3.8
Overall Ratings On Job Satisfaction	3.9	3.6	3.6

*The numbers given are for the total number of respondents. Item means were calculated based on the number of responses to that item. Missing data were not included in the calculation of the means.

Table 4

satisfaction went from 3.9 to 3.6. Between 1991 and 1992, of the eight items, three went down, and five went up, while the overall rating (3.6) stayed the same. The three items that went down were those related to job security, salary, and the merit pay system. The greatest change was seen for the item related to salary. It went from a 3.2 in 1990 and 1991 to 2.7 in 1992. In general, with the exception of satisfaction with the physical environment and personal work space, job satisfaction levels have not regained 1990 levels. Administrators exhibited the highest levels of job satisfaction for all of the three years of the survey.

Conclusions

We at Howard Community College believe that the QUEST is a functional and effective instrument to evaluate customer service from the college staff's perspective. We have also developed its student counterpart, which gives students the opportunity to rate college services. These two instruments are part of HCC's overall strategic planning process and its board of trustees information system. Taken together, they give a comprehensive assessment of the quality of college services. We plan to administer both surveys annually and to track changes in ratings.

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Implementing An Information Infrastructure For Enrollment Management

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Introduction

Focused and timely information is essential to successful enrollment management. Enrollment management can be defined as a coordinated effort to influence the size and characteristics of an institution's student body, through recruitment, admissions, pricing, financial aid, advising, and other policy choices.

Conceptually, enrollment management links research on individual college choice, student-institution fit, and student retention. Although it is an organizational construct, enrollment management is founded on information, largely derived from institutional research and policy evaluation (Hossler and Kemerer, 1986). To be successful, enrollment managers must understand the forces that influence individual decisions about college choice and persistence. This micro-level understanding is prerequisite to answering institutional policy-level questions. It is useful to analyze student enrollment in a linear student flow model, from initial inquiry through application, enrollment, persistence, completion, and continuing to postgraduate follow-up. Enrollment managers need answers to numerous questions at each stage of student experience with the institution. For example:

- How widely known is the college? How do prospective students view the college? What other institutions are considered by prospective students?

- How can we increase the size of the applicant pool? How can we attract the students we would most like to enroll?

- How can we improve yield? How effective are our existing recruitment activities? What factors differentiate our college from its closest competitors and influence admitted students' final choices?

- What influence does financial aid have on student decisions to enroll and persist? What is the perceived campus culture, and what influence does it have on retention and attrition?

- What proportion of a freshman class persists to graduation? Do any subgroups exhibit significantly higher than average attrition? Why do some students persist while others do not?

- How successful are our alumni in their post-graduate endeavors? What proportion remain involved with the institution? What characteristics describe alumni donors?

This sampling of student decision and institutional policy questions captures the comprehensive, long-range nature of an enrollment management program. The results of recruitment are measured not just in terms of the number and characteristics of new students who enroll but by the number who become well-adapted, successful students and productive alumni. The encompassing reach of enrollment management also suggests how difficult it can be to implement successfully. Larger universities, where enrollment management responsibilities may be widely dispersed, pose particularly challenging tasks of coordination and monitoring. Indeed, research by Dolence (1989-90) suggests that over half of the institutions that try to establish enrollment management programs fail.

Five Steps to Success

One factor contributing to the low rate of success of enrollment management programs is the insufficient information base supporting them. This essay presents a framework for providing the information needed for successful enrollment management. Figure 1 suggests that two types of information are needed at all six stages of enrollment management: performance monitoring indicators and in-

Enrollment Management Information Needs Matrix

	Inquiry	Application	Enrollment	Persistence	Completion	Alumni
Performance Monitoring Indicators						
Policy Research and Analysis						

Figure 1

depth policy research and analysis. Implementing a framework to provide this information requires five steps:

1. Review the literature on college choice, student-institution fit, and student retention.
2. Develop a performance monitoring indicator system.
3. Construct longitudinal cohort tracking files.
4. Identify patterns in aggregate student behavior.
5. Conduct survey and focus group research to illuminate key student decision points.

Review the Literature

The first step in implementing an effective information base for enrollment management is to review the pertinent national literature. It falls into two broad types. First is the recent body of work explicitly concerning enrollment management as an organizational construct or process. Written within the past ten years, this literature is largely responsible for the spread of the concept and language of enrollment management. A brief reading of this material will help you focus on the goals and activities associated with successful enrollment management. The second and more diverse body of literature consists of the research and policy studies that form the necessary information infrastructure supporting the successful implementation of an enrollment management process. Research into student college choice, student-institution fit, pricing and financial aid, student attrition, and other related topics can all be considered part of the enrollment management literature. Understanding student behavior is prerequisite to influencing it. You need to have some familiarity with the national findings to help you decide what institution-specific research you need, how best to design your enrollment management studies, and how to interpret what you find.

Claffey and Hossler (1986) have described effective enrollment management as holistic in vision, proactive in stance, informed in decisionmaking, flexible and tolerant in climate, and led by the highest levels of administration. Among the necessary conditions for effective enrollment management, however, they argued that information was paramount:

> Planning and evaluation are at the heart of an enrollment management system, but the single most critical element in all of this effort is accurate, timely, usable information. Thus, our ability to influence our enrollments to any degree is a direct function of the information...available. (p. 106.)

Hossler (1987) argued that in practice enrollment management was in danger of becoming simply a new term for the work of admissions offices. Would-be enrollment managers were not developing the requisite knowledge base in student college choice, student-institution fit, student retention, the impact of financial aid, and other research, but rather were changing titles and rearranging organizational charts. This is where the second broad category of enrollment management literature, plus local institutional research, becomes essential.

A growing body of literature exists to provide enrollment managers with a foundation of knowledge for interpreting their own campus research and experience. The recruitment literature includes research on student college choice (Litten, Sullivan, and Brodigan, 1983; Zemsky and Oedel, 1983; Lay and Endo, 1987), student-institution fit (Williams, 1986), and the impact of pricing and financial aid (Litten, 1984; Leslie and Brinkman, 1987; Huff, 1989). The student persistence literature includes several useful reviews and anthologies (e.g., Pascarella, 1982; Tinto, 1987) as well as innumerable case studies. In addition to the findings of educational research found in the scholarly literature, the enrollment manager relies heavily on institution-specific information. Useful articles on using institutional research for enrollment management include Davis-Van Atta and Carrier (1986) and Glover (1986). This essay presents one approach to organizing institutional research support for enrollment management that has proven successful at both a selective liberal arts college and an open-door community college.

Develop a Performance Monitoring Indicator System

The information needs of the enrollment manager fall into two categories: performance monitoring indicators (PMIs) and policy research and analysis. To track and evaluate the implementation and success of an enrollment management program, specific quantifiable measures are needed:

> Without the development of an effective performance indicator system, enrollment management, as a truly innovative concept, will diminish in stature and will be viewed by many as just another administrative black hole—another office spending money without a clear definition or purpose. (Costello, 1989, p.70.)

The coordinating and integrating functions of enrollment management are facilitated by the availability of a comprehensive set of agreed-upon performance monitoring indicators. The PMIs are typically simple counts or ratios that report the status of enrollment at a point in time. See Figure 2 for examples.

Examples of Performance Monitoring Indicators

Inquiry	Application	Enrollment	Persistence	Completion	Alumni
Number of mail and phone inquiries received compared to same time last year	Number of applications received	Number and percent of accepted applicants enrolling	Retention rate to second term	Percent graduating within 6 years	Percent earning higher degrees
			Number of students on academic probation		Percent obtaining program-related employment
Number participating in escorted campus visits	Number and percent of applicants offered admission	Number, type, and amounts of financial aid awarded	Persistence rates to sophomore/junior/senior status	Graduation rate for each racial/ethnic group	Percent contributing to annual fund

Figure 2

Ideally the PMIs are developed with the consultation of the offices responsible for each stage of the enrollment process, and are used by the enrollment manager to evaluate the performance of each unit as well as to oversee the broader institutional enrollment picture.

Most colleges track at least some PMIs for the recruitment phase (encompassing the first three stages of student decision, namely inquiry, application, and enrollment). Key PMIs may be tracked daily during the application and registration period. An enrollment management plan would have established targets or expectations for each of these indicators. At a minimum, the enrollment management team should have clear expectations about the number of applications, offers of admission, and resulting enrollments anticipated for the planning term. The mix of full- and part-time students, and the credit hours or full-time-equivalents they generate would usually have been forecast for budget planning purposes and also routinely tracked during the registration period. Since enrollment management concerns the characteristics as well as magnitude of enrollment, other attributes, such as the SAT score distribution of applicants, admits, and enrollees, may be monitored. The racial/ethnic composition at each stage may be reported to help in monitoring achievement of diversity goals. The distribution of enrollment by college, program, discipline, class location and time would be monitored for departmental faculty and facilities planning.

Performance monitoring indicators are also useful for evaluating the student retention phase, broadly defined to include not only student persistence to graduation but also postgraduate association with the institution, as active alumni, contributors, or continuing education students. Among the PMIs for this phase might be retention rates of various student groups to their second semester, since this is often a time of high attrition, and persistence rates to sophomore, junior, and senior status. Graduation rates for different populations, such as athletes and racial/ethnic groups, might be routinely reported. Finally, student outcomes indicators such as the number transferring or entering graduate school, the number passing licensure examinations, the percent obtaining program-related employment, and the percent satisfied with their college experience might be tracked.

Much of the data needed for monitoring the performance of the enrollment management effort come directly from the information gathered from student applications and registrations transactions. The typical campus student information system contains both term enrollment and student history or transcript files that together include demographic, course enrollment, and performance data useful for enrollment monitoring purposes. Special record-keeping procedures may need to be implemented beyond those commonly in place, however. For example, a system may need to be implemented in admissions for tracking mail and phone inquiries. Surveys may be needed to gather background information beyond that required in the college application. Follow-up surveys will be necessary to learn post-enrollment outcomes.

While collecting the needed information is often not difficult, the more frequent problem to its successful application is its organization. Standard transcript files and frozen term files are not ideal for student flow studies. Transcript files contain elements that are periodically updated, with old values usually written over and lost. Term files are often archived off-line and pulling selected elements from several such files can involve extensive programming and media manipulation. Survey research may have been conducted in isolation from record-based studies and survey data stored in separate datasets. How data are organized greatly affects their usefulness.

Construct Longitudinal Cohort Tracking Files

Since enrollment management encompasses student experiences with an institution from inquiry to post-graduation, data systems paralleling this student flow continuum are most useful. In place of discrete files established for other purposes, most institutions will benefit from the construction of separate longitudinal cohort files for enrollment management analyses. (For useful overviews, see Ewell, Parker, and Jones, 1988; Bers, 1989; Palmer, 1990). Free-standing tracking files for selected entering cohorts of students preserve key data values and facilitate data analysis. The data elements in such files fall into three broad categories. First are student attributes such as demographic and academic background variables usually collected as part of the application process. Next are student progress variables recorded each term, such as credit hours attempted and earned and term grade point average. Finally are outcome measures for graduates and those who leave without completing a program. These may include further education and employment indicators. Because tracking numerous cohorts simultaneously is complex, and because there usually is little variation in successive years (unless substantial changes in institutional policies or entering student characteristics have occurred), it is generally sufficient to track classes entering every third year. Most institutions will track only cohorts entering in fall terms, though spring or summer entrants if substantial in number or notably different in characteristics may warrant separate tracking. Students should be tracked for six to eight years to allow time for part-time students and stop-outs whose attendance is interrupted to graduate (Ewell, 1987).

Identify Patterns in Aggregate Student Behavior

The performance monitoring indicators will provide a clear overview of what is happening with campus enrollment. (For example, see Figure 3.) The tracking system should be used to supplement the information gleaned from the PMI summary statistics. The goal is to discern patterns in the aggregate student behavior that will

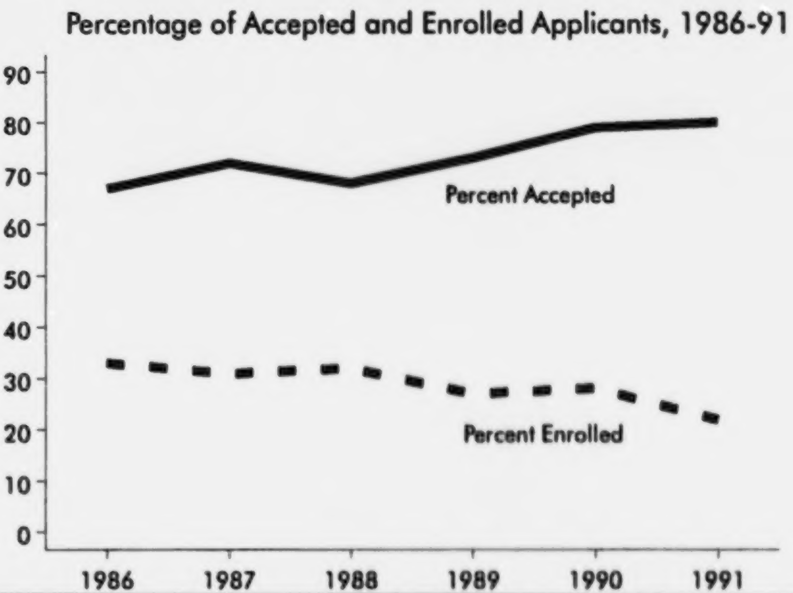

Figure 3

guide further in-depth research (Terenzini, 1987). A good approach is to develop a standard analysis yielding the student behavioral data of most interest. This can be run for several cohorts to produce trend data, and for subgroup analysis within a given cohort. For example, to assess student progress toward a degree, total cumulative credit hours earned at the end of each term could be analyzed. The median credits earned, the distribution of students in credit hour ranges, or the percentage of students earning a specified minimum number of credits might be reported. To illustrate, suppose 35 percent of all the students entering your college in fall 1990 had earned at least 30 credits after two years. Assume this same analysis had been conducted for prior entering cohorts, and that the percentage earning at least 30 credits after two years had steadily declined from over 50 percent for students entering in fall 1986. This negative trend should alert the institution to a need for further study of why student progress toward a degree is slowing. Similarly, analysis of this same indicator for subgroups of students might prove enlightening. Students needing remediation, attending part-time, or interrupting their studies ("stop-outs") would probably accumulate credits at a slower pace than better prepared students attending full-time without interruption. Perhaps the decline in the overall percentage reflects an increase in the proportion of students needing remediation, attending part-time, or interrupting their studies.

In designing a tracking system, try to anticipate future research needs. In addition to the obvious demographic variables, ensure that data elements are incorporated in the tracking file identifying subgroups of students of research interest at your institution. While it is usually possible to go back to original files to obtain data whose need was not foreseen, this can be cumbersome. It is better to anticipate likely research questions and include the requisite data elements from the start. These may include identifiers for remedial students, non-native English speakers, participants in special programs, athletes, scholarship recipients, or other groups of special concern. If this is done, then it is relatively easy to examine student attendance patterns and outcomes for subgroups by running the standard analysis against the appropriate variables.

Conduct Survey and Focus Group Research

Along the continuum from initial inquiry through post-graduate relationship with the institution, students face continual decisions: whether to apply, whether to enroll, whether to continue (a decision made each term). To influence student enrollment patterns, it is essential to know as much as possible about the key student decision points: when the crucial decisions are made, what factors influence the decisions, how the institution might influence the decisions. While the PMI tracking system can help identify the key points, more in-depth research and analysis are needed for an adequate understanding to inform policymaking.

Survey research can be most useful when designed and implemented to add to information yielded by the tracking system. Administer surveys to investigate student motivations, attitudes, and decision-making processes at key points in their college experience: at entry, after their first semester, immediately after they leave. Add key survey response data to the cohort file, or maintain separate files for survey data that can be easily linked to the longitudinal data.

Qualitative research findings such as those learned in focus groups can add insights into student behavior beyond those reported in typical mail survey responses. They can provide a reality check: student decision processes may be more tentative and confused than the responses elicited by multiple-choice survey questions suggest. Examples of focus group applications to enrollment management include assessing institutional image and position compared to the competition, evaluating promotional materials, learning the special needs of particular student groups, and generating new ideas for improving or adding services.

Examples of Enrollment Management Research

In this section, four examples of enrollment management research will be presented to illustrate the kinds of issues and approaches to studying them that characterize a comprehensive enrollment management information system. The research was conducted at a large, open-admissions community college in suburban Washington, D.C. Reflecting the county it serves, the college has a majority black student population. Three-fourths of the students attend part-time; half intend to transfer to a four-year college or university. The research needed at a senior institution would differ in scope and emphasis. Community colleges typically focus on a well-defined local market, characterized by considerable demographic and socio-economic diversity. The students who attend have a wide range of academic abilities and needs. Four-year institutions usually draw students from a larger geographic area, but the resulting student body is generally more homogeneous. The recruitment and retention research needed at each institution will reflect the individual circumstances, clientele, and mission of the campus involved. The purpose in describing these examples is to demonstrate how enrollment management research can address specific questions, and to show how the results can be used.

Focus Group Study of Delayed-Entry Students

Nearly two-thirds of the high school graduates of the county served by the community college do not go to college the year immediately after high school graduation. While colleges have had success serving older adult students, little has been written about younger, "delayed entry" students—those starting college one to three years after high school. A series of focus groups coordinated by the college's institutional research office revealed that such students saw themselves as a unique group, more mature and motivated than 18-year-olds yet closer to them in age and interests than to "adult" students. Most had postponed college to continue working in jobs begun while in high school. Jobs and careers provided a sense of purpose to these students; many cited job skill development or a desire to change careers and leave dead-end jobs as their reasons for entering college. These students described a sense of pride they had from paying for their college education, compared to 18-year-olds whose parents were footing the bill. They linked this to their motivation to succeed; without exception, they felt they were more committed to their studies than younger students. They described initial feelings of doubts about their abilities to keep up with the traditional students just out of high school, but found these fears quickly dispelled in their first classes. (The lack of a standardized admissions test requirement was a factor for many in choosing the community college.) The time out of school provided motivation, resources, and confidence to start college. Departments were urged to schedule more night and weekend classes and to ensure that full course sequences could be completed by students attending in limited time frames. Marketing implications from the focus group research included targeted messages to this specific group, emphasizing a personal, nonintimidating image of the college, a career advancement perspective, and an appeal to the pride and maturity of the youngest set of "adult" students.

Geo-Demographic Market Analysis

Though the community college primarily serves the residents of a single county, its service population is quite diverse. With a larger population than several states, the county is an aggregation of many, quite different, neighborhoods. Reliance on county-wide Census and other data for planning purposes can be misleading, obscuring pockets of prosperity and pockets of poverty. The research office decided to employ lifestyle cluster analysis, a geo-demographic tool increasingly used in the private sector but only in its infancy in higher education applications. The underlying premise is that people tend to live, or cluster, in neighborhoods that reflect their economic and social values ("birds of a feather flock together"). Geo-demographic enrollment analysis enables a campus to know more about who its current students are and where to find more of them. Although cluster analysis systems based on national data can be purchased, the college decided to develop its own. For universities that draw students from all over the country, the national cluster systems are appropriate choices. For more localized, commuter schools such as community colleges and regional universities, a custom cluster system developed internally offers several advantages. By avoiding large licensing fees, a custom system will generally cost less than using a national system. Since it is generated using local rather than national data, the custom system promises a more precise and accurate representation of the college's service area. Lifestyle factors particularly important to college planning, such as age and educational levels, can be statistically weighted to produce clusters with enhanced sensitivity to college applications. Using cluster routines included in the office's statistical analysis software, and a comprehensive set of local demographic data (available commercially or from governmental sources), staff in institutional research created a custom lifestyle cluster analysis system that identified 24 distinct neighborhood types within the county (Boughan, 1990). These neighborhood types varied in terms of their socioeconomic status, ethnic composition, housing stock, family life cycle stage, and other variables. Residents of these different neighborhoods had varied lifestyles, aspirations, and educational needs.

By geo-coding student address lists—identifying which Census tract and thus which cluster each student resided in—the research office was able to perform a new kind of enrollment analysis based on the lifestyle cluster typology. Contrary to expectations, the analysis revealed that the college's highest penetration was in the upscale clusters. The clusters differed in their mix of credit and noncredit student contribution, and in the coursetaking choices of their residents. For example, on the noncredit side, factor analysis revealed seven product themes (e.g., career exploration, high technology, creative impulse) within the overall course mix; these product themes, in turn, attracted enrollments from distinct sets of neighborhood clusters. The cluster typology was also used to investigate student outcomes on the credit side. The clusters grouped into six outcome patterns. For example, residents of mostly white, middle class, blue collar neighborhoods had the highest A.A. degree completion rate, but very low rates of transfer to senior institutions. Residents of mostly black, middle-class clusters had relatively low A.A. degree attainment rates, but high rates of transfer to four-year colleges. The county's largest cluster, characterized by well-educated young singles and new families, living in garden apartments and at the beginning of their professional careers, had a unique outcome pattern of low rates of graduation and transfer but an extraordinary rate of continuing enrollment. Since this cluster already contains a high percentage of college graduates, it is likely that many of its residents were using the community college for job skill upgrading on a recurring basis.

The geo-demographic market information, processed through the custom lifestyle cluster analysis, yielded a wealth of new insights about the county and how its residents were using the community college. Combining the precision of Census tract socio-economic data with the enrollment and achievement histories available on student databases produced an information resource of great analytical and operational promise. The college is currently applying what it has learned to the development of targeted marketing strategies.

Telephone Survey of Non-Returning Students

An eight-year longitudinal analysis discovered that over a quarter of the college's new fall entrants did not return for a second term. Why did so many students – over a thousand that fall – discontinue their studies after only one semester? What could the college do to influence more to continue? To address these issues, a telephone survey of fall entrants who did not return for classes the following spring was conducted. A phone survey was chosen to overcome the problems of poor response rate and response bias likely with a mail survey of this population. The study was designed and overseen by the institutional research office. To reduce costs, college staff were trained to conduct the interviews. Nearly 350 interviews were completed. Four in ten respondents gave employment-related reasons for discontinuing their studies. Nearly a third said that a lack of time prevented them from continuing. Other major reasons given for not returning included achievement of their goal at the college, transfer to a senior institution, and changes in family situations. When asked if the college could have done anything to have influenced them to continue, more than 80 percent said no. Those that said yes cited course availability and scheduling difficulties and lack of financial aid for part-time students. Eighty-five percent said they planned to return to the college. The survey affirmed that the high attrition at the end of the students' first term was not due to dissatisfaction with the college, but rather reflected the circumstances of the college's student clientele. The findings prompted a review of course scheduling and an investigation of aid possibilities for part-time students; but its major insight was that high attrition may be inherent given the nature of the population being served.

Patterns of Attendance Analysis

External agencies, including Congress, state legislatures, and regional accrediting bodies, are mandating disclosure of college graduation rates. Overall graduation rates at the community college were under 15 percent. The college needed to understand the factors producing such low rates in order to adequately explain them and design programs to improve them. Longitudinal cohort analysis provided a basic understanding of student patterns of behavior and identified several areas for further study. Tracking students over an eight-year period, it found that over a fourth of the first-time students entering in Fall 1980 attended only that one semester. Another third, the "stop-outs," had interrupted patterns of attendance. Students able to attend without interruption were much more likely to graduate. While only 12 percent of the entire cohort had graduated from the community college within eight years, a majority of those who attended for six or more consecutive semesters graduated. Many who discontinued study at the community college had transferred to four-year colleges and universities. Analysis of graduation and transfer data for seven entering cohorts found increasing proportions of students transferring without first earning a community college award, simultaneous with a decline in A.A. degree attainment rates.

Concurrently with these retrospective cohort studies, the research office initiated a project to follow the Fall 1990 entering class in depth. Following a contemporary group of students provides a better understanding of both the progress of current students and the impact of current institutional policies. Preliminary analysis after two terms found a quarter of the students had yet to earn a single credit. The median cumulative credits earned for the cohort was six. Less than two percent were on a pace to graduate within two years. The need to complete remedial courses was slowing credit accumulation for many. Three-fifths of the entrants completing placement testing needed remediation in at least one area of reading, composition, or mathematics. The extent of need was severe for many students. For example, after two semesters, only eight percent of those who needed and had taken remedial mathematics were ready to take the introductory credit mathematics course. Nearly four-fifths of the students had been placed in remedial mathematics courses in which successful completion would prepare them for another, higher level remedial course. Thus, the initial findings from the longitudinal cohort analysis prompted a more in-depth look at the remedial program at the college. Further tracking and program evaluation studies are underway.

Conclusion

Efforts to influence the magnitude and composition of campus enrollments depend on timely, accurate information. Data are needed for monitoring the ongoing enrollment picture, as well as for investigating in detail student decisionmaking concerning college choice and persistence. This essay has presented one way of organizing the information support that is essential for effective enrollment management. The framework advocated here has several advantages:

1. Its encompassing perspective forces an institution to look at student interaction with the college as a continual process through time, starting with an initial inquiry and continuing on after formal classwork ends.

2. It encourages development of enrollment targets, performance monitoring indicator systems, and longitudinal cohort tracking files for following and analyzing enrollment patterns – tools of great value.

3. It identifies areas of student behavior where institutional knowledge is insufficient, so that scarce research resources can be devoted to studying student decision points where the greatest insights may be uncovered.

4. It promotes collaboration between institutional research and enrollment management administrators, so that enrollment research will be directly focused on institutional policy issues.

5. It provides structure and direction to the enrollment analysis part of the institutional research agenda.

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Institutional Effectiveness: Designing Systems To Promote Utilization

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Introduction

In the 1980's, concerns about the overall quality of educational institutions gave rise to the institutional effectiveness movement. The promise of this movement to increase educational quality and effectiveness led to its rapid growth as numerous two- and four-year colleges developed their own systems.[1] This article will focus on the overall value of institutional effectiveness programs in promoting change and improving quality. Simply put, "How will the information acquired through institutional effectiveness programs be utilized to improve educational quality?"

Unfortunately, the history of similar management programs and evaluative systems would suggest that in most cases the system's output will be under-utilized, employed in ways never envisioned, or simply ignored. Management systems, such as program evaluation, zero based budgeting, and management by objectives, whose promises were just as bright, never reached their initial expectations. However, the experience of these systems, their failures, corrective actions, and altered expectations provide information for improving the designs of future systems. With each of these systems, one message is clear—to insure the effectiveness of any management system, the politics of the organization must be considered, and not just after the fact. Rather, they must be considered from the outset, and incorporated into the design and implementation of the entire management system.

This paper begins with a brief review of the current status of institutional effectiveness and then explores other management systems for lessons which add useful information for designing and implementing institutional effectiveness systems. Next a logic of design for management systems is explored. Finally, the design principles are applied to make some preliminary recommendations for institutional effectiveness systems.

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[1] A broad literature has also grown up as well as a number of professional associations and conferences which are primarily concerned with issues of institutional effectiveness. This information will not be detailed here as there are numerous literature reviews and materials available on this subject.

Current Designs

As the institutional effectiveness movement has grown, the tenets of responsible programs have been set forth and received considerable consensus among practitioners, extending to definitions, terms and processes. This is not to suggest there are no disagreements in the field or alternative points of view, rather that at a general level there is widespread agreement, an agreement which even extends to the controversies.[2]

There are a number of good definitions of institutional effectiveness. A representative one comes from the National Alliance for Community and Technical Colleges, which defines institutional effectiveness as "the process of articulating the mission of the college and setting goals, defining how the college and the community will know when the goals are being met, and using the data from assessment in an ongoing cycle of goal setting and planning" (Grossman and Duncan, 1989).

Evident in the definition is a process of institutional effectiveness.[3] First, there is a prevailing consensus that institutional effectiveness begins with an analysis and expansion of the institution's mission. Effectiveness, after all, cannot be assessed unless actions and programs are judged against the purpose of the organization. There is also relatively widespread agreement over many of the major goals of education, such as student learning, broad access to education, and diversity, although specific conceptualizations vary from system to system and from plan to plan.[4] Broad agreement also exists on conceptual issues of research design. For example, the importance of quantifiable data is stressed and there is even some agreement on what could be considered a set of standard measures. Finally, there is a recognition that the institutional effectiveness system must be tied into other college systems, such as the college planning system, either through linkage or usurpation. The important point here is that the information produced by the institutional effectiveness system must be integrated into other systems or it will not be utilized in a manner consistent with the promises of the system.

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[2] A review of the leading "practical guides" on institutional effectiveness from associations, consortiums and practitioners demonstrates the similarity of approaches.

[3] For example, see James Nichols, *A Practitioner's Handbook for Institutional Effectiveness and Student Outcomes Assessment Implementation*, for an excellent overview and explanation of the institutional effectiveness model and nature of the implementation of institutional effectiveness.

[4] For examples of the similarities among community colleges, see the League for Innovation in the Community College's *Assessing Institutional Effectiveness in Community Colleges.*

Clearly, most of the information on institutional effectiveness is concerned with what could be called the technical, methodological, and process issues which relate either to the design of the system or its implementation. It is highly rational in its orientation, examining the components of the system in terms of their role in the system and not within the context of an organization. This is not to say that the politics of the organization have been completely ignored. There are references to a number of issues which lay outside the technical aspects of institutional effectiveness. For example, the support of top management is often mentioned as a necessary condition and the importance of consensus and collegial decision-making in the process is often stressed. A related problem often mentioned is that faculty must be incorporated into the process and that they are the most difficult group to win over. And finally, the competition for adequate resources and time to implement the program are common concerns. There are other concerns but these seem to be the most common. However, for the most part these issues are seen as afterthoughts to the technical issues of the process.

The successful implementation of institutional effectiveness programs must include not only the development of the system, but ultimately the utilization of the system's information in effectuating change. In discussing the implementation of institutional effectiveness, Nichols touches on the enormity of the challenge when he notes that "Genuine implementation of institutional effectiveness will change the way many institutions operate. A change of this magnitude cannot be brought about in a short period of time..."(Nichols, 1991, p. 26). The enormity of this change cannot be guaranteed by technical expertise and rational systems alone. To better understand the prospects of success for institutional effectiveness and its possibilities in the next decade, other management systems should be considered. The lessons learned from these systems should provide valuable insights into the design of institutional effectiveness programs.

Lessons from Other Systems

Just as institutional effectiveness holds great promises for the nineties, evaluation research held great promises in the 1960's and 1970's. The rapid growth of governmental programs and expenditures in that era led to the need to assess government programs to determine which programs should survive in the competition for limited resources. Rather than depending on political circumstances to determine which programs should survive, the idea was to bring scientific methodology and data from the social sciences to the problem. Programs would be evaluated to determine their efficacy. Programs could then be compared and the "best" programs would continue while the "poor" ones would be discontinued. A vast literature grew up which was technically sophisticated and set the standards for evaluation research (Suchman, 1967; Weiss, 1972; Guttentag and Struening, 1972).

The optimism of the era for the success of evaluation research was high (Weiss, 1972, p. 4.), just as it is for institutional effectiveness today. However, within a few years, the reality of program evaluation had failed to live up to its expectations. While much had been written about the technical aspects of evaluation research, and numerous program evaluations had been conducted, the level of utilization was extremely low. Non-utilization was in fact the norm. (Patton, 1985, p. 18-19). The recognition for those involved in evaluation research was eventually that evaluation takes place in a political world and is part of the political process. In his work, *Utilization-Focused Evaluation*, Michael Patton notes that evaluation research is inherently political because people are involved, data and their classification and categorization are involved, decisions are involved, organizations are involved, and information is involved:

> In effect, what we have been saying is that evaluation is partly a political process. We have not been discussing whether or not it should be political. The evidence indicates that regardless of what ought to be – and social scientists have largely argued that utilization of scientific findings ought to be apolitical – the utilization of evaluation research will be partially political in nature. The degree of politicalization differs, but it is never entirely absent. (Patton, 1985, p. 49.)

Planning systems provide additional evidence to support this position. Early planning systems, and unfortunately even some today, could be described as comprehensively rational systems. Planning followed a set of rational technical guidelines. Within these guidelines a search is conducted producing a set of policy alternatives. One best alternative is then selected based on specific standards. (Benveniste, 1989, p. 56-64.) Later planning models recognize the social or political nature of the process and incorporate it into their systems. In his book, *Mastering the Politics of Planning,* Guy Benveniste clearly points out that planning is inherently political:

> Why is planning political? Because it makes a difference. When planning makes a difference, something is changed that would not have changed otherwise. This implies that social power has been utilized (and) social power emerges from a political process: from agreements, from consensus building, and from conflict resolution. (Benveniste, p.2)

In both of these management systems the message is clear – to develop successful systems, recognize the inherently political nature of management systems and employ this information to design systems which incorporate these factors into the process. The greatest mistake that can be made is to wait and leave the political element to chance, which will most likely result in under-utilization of the products of the system.

Principles of Design

To what principles can we turn to aid us in designing systems which will be utilized? An interesting book which investigates the principles of design is Herbert Simon's *The Sciences of the Artificial*. In his exploration of the principles of design, he concludes that the science of design is the creation of the artificial, or an artifact. The artifact, in our case the institutional effectiveness management system, derives its character from three things—its purpose, its internal character, and the environment in which it performs.

The purpose of the institutional effectiveness system is provided by the title itself and the definition outlined earlier. It is a system whose purpose is to ensure that the institution is effective in accomplishing its basic mission. The inner environment, the internal character of the artifact, are the internal technical, process, and design principles set forth previously. Many of the characteristics of the inner environment are clearly related to issues of research design (the collection and operationalization of concepts, the selection of specific instruments and designs), management information systems (collection and dissemination of data), as well as other management systems.

Finally, we come to the outer environment, that part of the artifact design which has only been considered secondarily. What is required is to more completely incorporate the principles of the outer environment itself into the artifact. Our systems must be adapted to the environment of educational institutions. Educational institutions are complex organizations, bureaucracies, which exhibit the same characteristics as other complex organizations.

The literature on bureaucratic organizations typically characterizes them as dynamic systems, and numerous theories have been proffered to explain their behavior. For our purposes, let us apply some of the logic of Anthony Downs from his work *Inside Bureaucracy* to our artifact of institutional effectiveness. First, assume that bureaucracies are collections of individuals who bargain for power; second, that power is fragmented and must be used judiciously; third, that individuals are boundedly rational in their behavior; and finally, that individuals act in accordance with their own goals which may be personal or may be organizational.

With these assumptions concerning the outer environment we can now turn to the design of our artifact.

Designs for Institutional Effectiveness

The incorporation of the outer environment into the artifact leads to two possible alternatives. First, the original purpose of the system can be held constant and the design principles in the system modified to achieve this purpose. Second, the purpose of the system can be altered. We may lower our expectations to one degree or another depending upon the artifact we create based on the nature of the outer environment, the nature of the political climate. In many instances, those involved with systems will not seriously consider the second alternative in their design and through this omission accomplish less in the pursuit of "purity" than they would gain through systemic and design compromise.

The alteration of the purpose of the system is acceptable, although to purists this may be an anathema. However, to set up ideal systems with the same level of expectations, the way they "ought to be", is unrealistic. What needs to be done is to adapt those systems to the real world, and change the "ought" to "is", the normative to the practical.

For institutional effectiveness systems to work, the imperative is to make them adaptive systems both in purpose and internal structure so that they will function in their outer environment and achieve their purpose. Simply stated, we cannot design our systems and then put them in an environment with a series of warnings about their behavior under certain conditions. Clearly we must incorporate the organization or the political aspect into the design itself, rather than after the fact. With this approach in mind, some recommendations are offered for the design of institutional effectiveness systems. This is not an exhaustive list by any means, nor is it an entire system. Rather, it should be viewed as a first set of adaptive recommendations for building an effective system.

1. Use hierarchical information systems for agreement and consensus building.

   While there is widespread agreement on concepts at a general level, the more specific one becomes the less agreement there is. Faculty, administrators, and board members can all probably agree on broad concepts, priorities based on the mission. The agreement on indicators of those statements is much less likely. Disagreements are bound to arise based on honest feelings as well as on the position of the actors. One design feature that will ensure agreement is to use hierarchical information systems with different levels of conceptualization which appeal to different audiences. At the lowest level the use of a series of multiple indicators can be used to respond to a single more abstract goal. This type of approach allows individuals at both levels to achieve their goals in the process. Top level administrators may want specific responses addressing specific issues, and not much more. Faculty or mid-level administrators may point to problems with the selection of a single indicator to provide such a response. The hierarchical system offers both points as a compromise, allowing a series of indicators to be used to answer a more general goal.

2. Recognize self-interest and tie rewards directly to actions.

   Individuals in organizations operate with a series of different goals. Some are the goals of the organization, some are specific area or professional goals, while others are very personal goals. Each of these goals must be considered when designing a system which will evaluate the effectiveness of those concerned. To assume that consensus building and appeals to the good of the institution will hold the program together is shortsighted and will lead to program failure. These appeals may work in the short term, but not in the long term. What are needed are systems which tie performance to actions. If information on goals and indicators is worth gathering, then the information should be put to use. Tying individuals in the organization to certain activities designed to address areas of institutional effectiveness is an endeavor that will assure that findings are put into place. The reward structure for individuals should also be tied to the performance of those activities as much as possible. Merit systems with goal directed behaviors identified by the institutional effectiveness programs should be put in place.

3. Tie performance to activities, not to outcomes.

   This is a corollary to number two above. Risk and uncertainty can quickly destroy a program. Those persons averse to risk will seek ways of reducing it. This leads to a loss of innovation which is critical in programs which seek to increase student learning. To eliminate the risk tied to innovative programs, performance should be tied to activities and not to outcomes. There are two types of failure in an organization, program failure and theory failure. When performance is tied to outcomes we are assuming program failure, that is, the program was not properly implemented. However, theory failure may be the reason. The activity which was undertaken did not have the desired effect because the theory was wrong. If we assume the latter, the risk of failure is reduced and we encourage innovation. When activities are approved in pursuit of objectives identified by institutional effectiveness, the activity and its completion should be judged, not the outcome.

4. Overestimate the resistance of those whose effectiveness is being measured.

   As noted above, most people are averse to risk and uncertainty. These become powerful motivators for individuals to resist change. To reduce this resistance we must act early to incorporate those affected into the decision making process and allow their opinions great weight in our system.

5. Depend on material rewards rather than good will; they will prove more dependable over time.

   One of the important internal characteristics of institutional effectiveness is that it will take a long time to implement. In his work on institutional effectiveness Nichols (1991) argues that the best incentive is to convince faculty of the intrinsic nature of institutional effectiveness. Material rewards seem to be secondary. We would not argue that material rewards are the only things that count, but we would argue that, over time, economic rewards will produce a more stable environment. While in the short run enthusiasm and idealism will carry the day and people will become committed, this will not last throughout an organization over the long term.

6. Be willing to use results for the purpose of legitimization as well as change.

   The notion that our information should be used improperly to provide legitimacy to something we know is incorrect is something most researchers of the rationalist mode are wont to do. The problem with this perspective is that we are clearly not able to judge when information is being used incorrectly. Secondly, tradeoffs are important for the sake of information in areas we feel strongly about. Therefore, the use of information must be viewed as an area to be compromised.

Conclusion

If institutional effectiveness is to be effective the information, the results of the system, must be utilized. If the system is to "speak truth to power" (Wildavsky, 1979), then it must be designed as a system which is adaptive to its environment. Design principles of the type suggested here will save systems from years of failure and the cynicism which accompanies each failure.

It is also quite possible that the incorporation of these principles into the system will alter the purpose of the system itself. This corruption of the pure is not to be avoided, but incorporated, so that total failure of the system will not come later. Our expectations may not be met, but we may achieve a lot. Program evaluation was designed to make program decisions based on science and not politics. What we have settled for is program improvement many times at only an incremental level.

With institutional effectiveness we may not be able to drastically alter the behavior of institutions or optimize student learning, but with adaptive systems we surely can begin to make improvements. The failure to adopt a realistic approach is worse than doing nothing at all. For systems which are set up for failure only waste resources and at best become costly learning experiences.

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Effective Institutional Research: Obstacles and Solutions

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Introduction

From discussions on BITNET concerning how people come into the field, to well-attended conferences and workshops, institutional researchers are constantly striving to assess and improve the state of their profession. The 30th anniversary of the Association for Institutional Research in 1990 brought forth several useful guides (Clagett and Huntington, MacDougall and Friedlander, Presley, Saupe) that collectively provide a foundation for understanding the functions and methods of institutional research.

In spite of this growing literature, conversations with colleagues frequently lead to comments about how institutional researchers are both overworked and underutilized. Oddly enough, given our profession, our anecdotal evidence has been backed up by little systematic collection of data. How widespread are feelings of understaffing and alienation? What obstacles limit the effectiveness of the profession? More importantly, how do our colleagues overcome these obstacles? While conceptual frameworks have been proposed for analyzing barriers to information use (for example, McLaughlin and McLaughlin, 1989), and common institutional research problems and solutions have been identified (Meredith, 1989), no recent data on the breadth of these concerns about office effectiveness exist. A study of such questions should inform our understanding of institutional research as a profession as it enters the 1990s.

Methodology

To investigate practitioner perceptions of institutional research effectiveness and productivity, a national survey of institutional research directors was conducted. A systematic random sample of directors was drawn from the 1990-91 AIR membership directory. A total of 150 AIR members with a title of director of institutional research or the equivalent was mailed a one-page questionnaire during April 1991.

The questionnaire requested information about institution size and type, and level, composition, and adequacy of institutional research staffing. Three open-ended questions about office effectiveness, productivity, and innovations constituted the heart of the survey. A cover letter briefly described the project, requested the recipients' input, and assured confidentiality. Respondents were not identified in any way on the questionnaire.

By the time analysis commenced, 123 responses had been received, 39 from two-year institutions, 60 from four-year public, and 24 from four-year private institutions. Even considering the population, this 82 percent response rate was exceptional, and was considered sufficient for drawing some tentative conclusions about the state of institutional research in 1991.

Survey Findings

Staffing Levels

Institutional research staffs ranged in size from 0.5 to 22.25 FTE. Four-year public institutions had the largest average staff size at nearly five FTE, while four-year private institutions had the smallest average staff size at 2.4 FTE. Community colleges fell in between, with an average of three FTE staff (see Table 1).

Total FTE Staffing in Institutional Research by Campus Type

Total IR FTE Staff	Two-Year Colleges (N = 39)	Four-Year Public (N = 60)	Four-Year Private (N = 24)
6 or more	5%	27%	4%
5 - 5.9	13%	17%	13%
4 - 4.9	8%	13%	4%
3 - 3.9	33%	17%	13%
2 - 2.9	18%	15%	8%
1 - 1.9	20%	12%	50%
0 - 0.9	3%	0%	8%
Mean FTE Staff	**3.1**	**4.8**	**2.4**

Table 1

Examining staffing levels in terms of campus size, defined by fall credit headcount, revealed that larger institutions had larger institutional research staffs (see Table 2). The majority of the small institutions (less than 5,000 students) had less than 2 FTE staff, while the majority of the large institutions (over 15,000 students) had 5 or more FTE.

Total FTE Staffing in Institutional Research by Campus Size

	Fall Credit Headcount		
Total IR FTE Staff	Less than 5,000 (N = 24)	5,000 to 15,000 (N = 49)	More than 15,000 (N = 48)
6 or more	0%	4%	35%
5 - 5.9	4%	16%	19%
4 - 4.9	0%	10%	15%
3 - 3.9	13%	37%	8%
2 - 2.9	17%	16%	13%
1 - 1.9	54%	16%	10%
0 - 0.9	13%	0%	0%
Mean FTE Staff	**1.7**	**3.3**	**5.4**

Table 2

Respondents were asked to rate the adequacy of their staffing on a five point scale, with 1 anchored as "inadequate" and 5 as "fully adequate." It was tempting to suppose that larger staff sizes would result in stronger evaluations of staff adequacy, and the results lent some support to that notion (see Table 3). The highest average ratings of adequacy (3.4) were given by those directors with larger staffs (at least 5 FTE). However, only six of the 123 respondents – less than five percent – felt that their staffing was "fully adequate." The overall average rating of staff adequacy was only 2.9 for the sample.

Total FTE Staffing and Mean Rating of Staffing Adequacy
(Five-point Scale)

Total IR FTE Staff	Number	Percent	Mean Adequacy Rating
6 or more	19	15%	3.4
5 - 5.9	18	15%	3.4
4 - 4.9	12	10%	2.8
3 - 3.9	26	21%	3.2
2 - 2.9	18	15%	2.4
1 - 1.9	27	22%	2.2
0 - 0.9	3	2%	3.0
Total	**123**	**100%**	**2.9**

Table 3

Ratings of adequacy varied somewhat by campus type (Table 4) and campus size (Table 5). The lowest mean ratings were given by directors at four-year public institutions and by directors at small campuses.

Rating of Adequacy of IR Staffing by Campus Type

Rating	Two-Year Colleges (N = 39)	Four-Year Public (N = 60)	Four-Year Private (N = 24)
(Fully Adequate)			
5	5%	3%	8%
4	33%	28%	42%
3	18%	18%	17%
2	33%	37%	29%
1	10%	13%	4%
(Inadequate)			
Mean Rating	2.9	2.7	3.2

Table 4

These ratings of staff adequacy suggested some general dissatisfaction on the part of institutional research directors with their ability to perform their jobs, given current staffing levels. (It would be valuable to learn how other professionals view the adequacy of their office staffing.) Responses to the open-ended survey items, described below, reinforced the prominent role staffing inadequacies assumed in the respondents' perceptions of their ability to do their jobs well.

Rating of Adequacy of IR Staffing by Campus Size

	Fall Credit Headcount		
Rating	Less than 5,000 (N = 24)	5,000 to 15,000 (N = 49)	More than 15,000 (N = 48)
(Fully Adequate)			
5	8%	6%	2%
4	17%	39%	33%
3	17%	12%	23%
2	46%	33%	31%
1	13%	10%	10%
(Inadequate)			
Mean Rating	2.6	3.0	2.9

Table 5

Obstacles to Effectiveness

Content analyses were performed on each of the open-ended items, with responses grouped into about 10 categories for each question. The categories defined by independent raters were very consistent, suggesting fairly unambiguous themes.

The first open-ended item asked "What is the biggest obstacle to increasing the effectiveness of institutional research at your institution—its ability to influence policy or inform decisions?" The most frequent response given was that staff was insufficient (see Table 6). This included comments on both the size and expertise of research staffs, although the size of the staff was by far the larger concern. This is consistent with several other problems cited, specifically, external reporting demands and lack of time. As one respondent stated it, "... staff just don't crawl out of the data pile often enough."

Obstacles to IR Effectiveness in Influencing Policy Decisions

1.	Insufficient staff	15%
2.	President not a data person	11%
3.	Lack of accessible, integrated database	10%
4.	Organizational structure, lack of access to decision makers	9%
5.	External reporting demands	7%
6.	Lack of time	7%
7.	IR not seen as part of leadership team	6%
8.	Lack of executive planning, issue identification	6%
9.	Campus politics	5%
10.	Insufficient lead time	4%

Table 6

The lack of appreciation of data and research by presidents and other campus leaders was also heavily lamented. One respondent put it succinctly: "The biggest problem is not having people at the top who really want the data and information institutional research can provide." Related to this were problems of organizational structure. Many of the respondents reported limited access to top decision makers. It is difficult to influence policy decisions if you aren't included in discussions of them and you don't see the issues coming until they're upon you. Being "left out of the loop" was frustrating to many who cited cases where useful information was available but unsolicited or ignored.

Productivity Enhancement

When asked for suggestions regarding how their offices could become more productive, a fifth of the respondents said by adding more staff (Table 7). This was the most frequent suggestion. Related to this, ten percent suggested skill training for office staff. The second and third most frequent responses dealt with computer technology, and included improving the quality of and access to mainframe database systems (cited by 16 percent) and further exploiting personal computer technology (11 percent).

Proposed Means for Increasing IR Office Productivity

1.	Add more staff	21%
2.	Better mainframe database/access	16%
3.	Better use of PC technology	11%
4.	Skill training for IR staff	10%
5.	Early identification of key issues by management	7%
6.	Automation/standardization of routine reports	6%
7.	Better IR office management procedures	6%
8.	Reduce state/federal reporting burden	6%
9.	Increase IR budget	4%
10.	Stop answering external surveys	3%

Table 7

It was somewhat surprising to find that only four percent of the respondents specifically mentioned increasing office budgets as a way to improve productivity, although more popular responses such as adding staff, better computer resources, and professional development and skill training all would entail more resources. Also, considering the complaints commonly heard among colleagues, a percentage higher than three percent might have been expected urging less responsiveness to external surveys.

What Works in Institutional Research

The survey asked for specific kinds of "innovations, procedures, techniques or tools" that have helped institutional research professionals improve their effectiveness and productivity. The top five response categories dealt with various aspects of computer technology (see Table 8). Almost a quarter of the respondents cited the usefulness of microcomputer software, either in general or specific packages. Microcomputer systems, as opposed to software specifically, were praised by 16

What Works: Innovations, Procedures, Techniques, and Tools

1.	PC software	23%
2.	On-line access to mainframe files	18%
3.	State-of-the-art microcomputer systems	16%
4.	Customized databases/automated report generation	15%
5.	PC networks	11%
6.	Factbooks	10%
7.	Crosstraining all IR staff	7%
8.	Statewide IR groups/projects	6%
9.	Longitudinal cohort tracking files	5%
10.	Regular communication with top management	5%

Table 8

percent. Eleven percent identified PC networks as beneficial. Clearly, and not surprisingly, employing computer technology—particularly microcomputers—was viewed as the most valuable means for increasing the effectiveness of our profession.

Also consistent with responses to the previous questions, the cross-training of staff in all equipment and software used in the office plus regular communication with the president and top management were identified as of great value.

Other solutions cited included the use of factbooks, involvement in statewide institutional research groups and projects, and the use of longitudinal cohort tracking files. This latter suggestion probably reflects the increasing emphasis on student outcomes assessment.

Summary and Conclusions

This study attempted to identify the more common problems experienced by institutional research professionals and to solicit the solutions practitioners have found to be effective in dealing with them.

The great majority of respondents identified serious obstacles to performing their jobs effectively. These problems were often things which were outside of the direct control of the professionals affected. Recurring themes included inadequate staffing and excessive workloads, limited access to and poor quality of information systems, restricted access to decision makers and an underappreciation of the value of good institutional research, and inadequate training of staff.

A few respondents reported good news. For example, in response to the item about obstacles to effectiveness, one person stated, "Are you assuming that IR offices are less than effective? This office is part of the President's staff and has direct impact on policy." However the overwhelming majority of comments, and the numerous requests for results of the survey, suggest concern for the profession by many of its members.

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Surveys for College Guidebooks: A Guide to Guide Usage

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Introduction

We spend an increasing amount of time each year in institutional research offices (as well as other administrative offices) completing surveys for college guidebooks. From the one-page survey for the "College Facts Chart" to the thirty-six-page survey for The College Board, each requires individual attention and often must be coordinated with other offices on campus. On many of the surveys, the items change from year to year, and so it is futile to try to develop systems which will prepare the data automatically. A few of the surveys, for example the "College/University Information Update" of Orchard House, ask for the same type of information in a myriad of ways so that the information can be sold to a number of different guidebooks. And since some of the guidebook publishers (e.g. College Board, Peterson's) also sell data-tapes of the information they've collected, individuals may purchase this information to create new guidebooks and then in turn send out new surveys with additional items that will make their guides "unique". The latest twist in this proliferation is the numerous software products now being created to guide prospective students to the "right" college. Each year more and more college resources are spent responding to these surveys.

In 1988 the National Association of College Admissions Counselors adopted a "Policy on College Rating Systems and Guide Books" ("Guide to," 1989). The policy outlines the responsibilities of publishers, institutions, and the general public in creating, providing information for, and using these products, as well as guidelines in evaluating them. It points out the responsibility of institutions to "be certain that the methodology behind the publication is sound." This responsibility can help us to weed out some of the obviously flawed surveys which come to our office. This still leaves a lot of surveys to sift through, however, and we need to find a way to manage the workload.

It is very important that correct, current, and complete information be made available to prospective students. The more informed a student is about the institutions she or he is considering, the more likely it is that the final decision will be a good one. We try to keep these principles in mind as we complete guidebook surveys. Obviously, however, there is a point at which the increasing time spent responding to these surveys no longer serves the prospective students. There is no denying the frustration felt by institutional researchers responding to these surveys when they are asked to provide SAT scores in the umpteenth way so that publishers of a new guidebook can find their niche and make bigger profits. If we had some sense of the usefulness of the different guidebooks to our prospective students, we could focus our efforts on the surveys for those guidebooks and redirect the resources we would have spent on surveys for less useful guidebooks to more productive areas.

In 1983 and again in 1991, Jon Nicholson carefully evaluated for Change magazine the advantages and disadvantages of a number of different guidebooks (Nicholson, 1983, 1991). He doesn't quite "rank" the guides, but the later article refers to two unpublished studies of the use by students of different guides. However, since both the colleges conducting these surveys were very different from our own (both were small private colleges), we could not assume that our own prospective students would find the same guides useful.

In order to try to assess the usefulness of the various college guidebooks to our prospective students, we surveyed high school guidance counselors in Maryland, new students at our own institution, and the guidebook publishers themselves.

Method and Results

High School Guidance Counselors A one-page survey was mailed to the "Director of Guidance" at each high school in Maryland (N = 284). The survey listed guidebooks and software products, and asked the counselor to indicate how often "you and/or your students use" each. The response options included: Used Frequently; Used Sometimes; Never Used; H.S. Doesn't Have; H.S. plans to use in future. Thirteen guidebooks and six software products were listed. The list was not complete, as it included only those guides which surveyed the institutional research office. However, space was provided for the respondent to list additional products. A final item asked which were the top three products, in terms of quality and usefulness.

A total of 118 guidance counselors (41.5 percent) responded to the survey. Tables 1 and 2 present the responses to the items asking about usage of the guidebooks and software products, respectively. (Each list is sorted by the frequency of use.) The most heavily used guidebooks included The College Handbook, Peterson's Guide, and America's Best Colleges (published by U.S. News and World Report). None of the software products listed were used by even half of the guidance counselors who responded.

High School Counselors Use of Guidebooks

(Number of Respondents = 118)

Guides		Used Frequently	Used Some	Never Used	Do Not Have	Plan to Have	No Response
The College Handbook	N	78	29	9	0	0	2
(The College Board)	%	66.1%	24.6%	7.6%	0.0%	0.0%	1.7%
Peterson's Guide to 4-Yr Col	N	88	19	3	7	0	1
(Peterson's Guides, Inc.)	%	74.6%	16.1%	2.5%	5.9%	0.0%	0.8%
America's Best Colleges	N	24	70	5	15	0	4
(U.S. News & World Report)	%	20.3%	59.3%	4.2%	12.7%	0.0%	3.4%
Money Guide to Best Col Buys	N	20	60	7	23	1	7
(Money Magazine)	%	16.9%	50.8%	5.9%	19.5%	0.8%	5.9%
Profiles of American Colleges	N	56	24	3	27	1	7
(Barron's Educ. Serv., Inc.)	%	47.5%	20.3%	2.5%	22.9%	0.8%	5.9%
Comparative Guide to Am Colleges	N	33	37	6	33	1	8
(Cass & Birnbaum)	%	28.0%	31.4%	5.1%	28.0%	0.8%	6.8%
Lovejoy's College Guide	N	43	25	7	37	0	6
(Simon & Schuster/Monarch)	%	36.4%	21.2%	5.9%	31.4%	0.0%	5.1%
College Planning Search Book	N	11	39	9	51	1	7
(ACT)	%	9.3%	33.1%	7.6%	43.2%	0.8%	5.9%
College Admissions Data Hndbk	N	22	13	10	60	2	11
(Orchard House)	%	18.6%	11.0%	8.5%	50.8%	1.7%	9.3%
Chronicle College Databooks	N	17	17	11	64	0	9
(Chronicle Guidance Pub, Inc.)	%	14.4%	14.4%	9.3%	54.2%	0.0%	7.6%
The Right College	N	9	18	14	69	0	8
(Simon & Schuster/ARCO)	%	7.6%	15.3%	11.9%	58.5%	0.0%	6.8%
The College Blue Book	N	4	17	15	71	0	11
(MacMillan Publishing Co.)	%	3.4%	14.4%	12.7%	60.2%	0.0%	9.3%
American Univ & Colleges	N	5	13	13	78	0	9
(Modoc Press)	%	4.2%	11.0%	11.0%	66.1%	0.0%	7.6%

Source: UMBC Survey of High School Guidance Counselors 1992.

Table 1

High School Guidance Counselors' Use of Software

(Number of Respondents = 118)

Software		Used Frequently	Used Some	Never Used	Do Not Have	Plan to Have	No Response
Guidance Information Systems	N	34	6	7	62	0	9
(Riverside/Houghton Mifflin)	%	28.8%	5.1%	5.9%	52.5%	0.0%	7.6%
COIN Education Products	N	5	22	12	73	0	6
	%	4.2%	18.6%	10.2%	61.9%	0.0%	5.1%
How Choose Right College	N	4	15	11	78	0	10
(Educ. Information Systems, Inc.)	%	3.4%	12.7%	9.3%	66.1%	0.0%	8.5%
Scan IV College Search	N	4	9	12	84	0	9
(Nat'l Education Software Service)	%	3.4%	7.6%	10.2%	71.2%	0.0%	7.6%
U Wisconsin Career Info Service	N	0	0	15	93	0	10
	%	0.0%	0.0%	12.7%	78.8%	0.0%	8.5%
Wintergreen Software, P.A.R. Inc.	N	0	0	13	92	2	11
	%	0.0%	0.0%	11.0%	78.0%	1.7%	9.3%

Source: UMBC Survey of High School Guidance Counselors 1992.

Table 2

Table 3 lists the additional guides that were listed by the respondents. The most heavily used was ACT's Visions, listed by over 20 percent of the guidance counselors. According to ACT, Visions was developed especially for Maryland (in

High School Guidance Counselors' List of Additional Guides

Additional Guides/Software listed by respondents:	Number	Percent
Visions (ACT) (SW)	25	21.2%
Peterson's College Search (Peterson's Guides)	11	9.3%
College Explorer (The College Board)(SW)	11	9.3%
Fiske Guide to Colleges (Random House)	8	6.8%
Insider's Guide to Colleges (Yale)	7	5.9%
Rugg's Recommendations on the Colleges (Rugg's)	7	5.9%
Peterson's College Selection Service (Peterson's Guides)	5	4.2%
College Admissions Index of Majors (Orchard)	5	4.2%
College USA	4	3.4%
Dime	4	3.4%
Learning Resource Network (College Video Production Co.)	3	2.5%
College Aid Sources for Higher Ed. (Nat'l Col Services)	3	2.5%
The Gourman Report (Nat'l Education Standards)	3	2.5%
Looking beyond the Ivy League (Viking Penguin)	2	1.7%
Peterson's Financial Aid Service (Peterson's Guides)	2	1.7%
Peterson's Guides for Learn. Disabled (Peterson's Guides)	2	1.7%
Peterson's Guide to Two-Year Colleges (Peterson's Guides)	2	1.7%

NOTE: Total N may not sum to number of respondents, and percentages may not sum to 100 because not all respondents answered this item, and those who did may have listed more than one product. Only products listed by at least two respondents are included.

Source: UMBC Survey of High School Guidance Counselors 1992.

Table 3

High School Guidance Counselors' Top Choices

Guides/Software listed among "top three...in terms of quality and usefulness":	Number	Percent
Peterson's Guides and Software (Peterson's)	48	40.7%
The College Handbook (The College Board)	38	32.2%
Barron's Profiles of American Colleges (Barron's)	30	25.4%
Guidance Information System (Riverside)	28	23.7%
Lovejoy's College Guide (Orchard House)	14	11.9%
Visions (ACT) (SW)	14	11.9%
College Admissions Data Handbook (Orchard House)	9	7.6%
Comp. Guide to Am. Colleges (Cass & Birnbaum)	7	5.9%
Fiske Guide to Colleges (Random House)	5	4.2%
Chronicle College Databooks (Chronicle Guidance)	4	3.4%
The Right College (Simon & Schuster/ARCO)	4	3.4%
Discover (ACT)(SW)	3	2.5%
COIN (Orchard House)	2	1.7%
Dime	2	1.7%
Index of Majors (The College Board)	2	1.7%
Money's Guide to the Best College Buys (Money Magazine)	2	1.7%
Rugg's Recommendations on the Colleges - Four-Year Guide	2	1.7%

NOTE: Total N may not sum to number of respondents, and percentages may not sum to 100 because not all respondents answered this item, and those who did may have listed between one and three products. Only products listed by at least two respondents are included.

Source: UMBC Survey of High School Guidance Counselors 1992.

Table 4

cooperation with the Department of Economic and Employment Development) and is available in about 150 high schools in the state. This product also has a component of career exploration.

When asked to rate which products were among the best in terms of quality and usefulness, the respondents chose Peterson's Guides, The College Handbook, Barron's Profiles, and Guidance Information Systems (see Table 4). However, none of these were listed by as many as half the respondents. It is interesting to note that, while few of the respondents listed the controversial guides by Money magazine and U.S. News as among the most useful (2 percent and 0 percent, respectively), over two-thirds of them continue to use those publications.

New Students Each summer, new undergraduate students to our institution participate in an orientation program before enrolling. Among the activities that occur during the orientation is the administration of a four-page survey. In the summer of 1992, one page of this survey was used to ask students about their use of college guidebooks and software.

The survey listed the same products that were listed in the guidance counselor survey. However, students were simply asked to check which of the guides they had "found to be useful or valuable in making your decision to attend" our institution. Like the counselors they were also given space to list additional guides which they had found useful, and to list which products (up to three) they felt were the best "in terms of quality and usefulness".

A total of 670 (57 percent) of the new freshmen and 881 (37 percent) of new transfers responded to this portion of the survey. The number of respondents checking each guidebook and software product are presented in Tables 5 and 6, respectively. (Again, the list is sorted by frequency of use.) Like the guidance counselors, the new students had found The College Handbook, America's Best Colleges, and Peterson's Guide to be the most useful. In general, new freshmen were more likely than new transfers to use any given guide. None of the guides were checked as being useful for as much as a third of the students. It is likely that, had ACT's Visions software been listed on the survey, it would have ranked fairly highly for new freshmen, since, as noted above, it is available in many of Maryland's high schools.

Very few of the respondents listed any guides as being a "top" one (see Table 7). Those listed reflected the guides indicated by the students as being useful.

Guidebook Surveyors Finally, a letter was sent to each of the data collection agents for the guidebooks and software products. The letter asked them to "provide us with a list of the high schools, community colleges, or other institutions in Maryland to which" their product is distributed or sold. All but two responded in some way (see Table 8). The responses ranged from simple counts to complicated explanations of why the data could not be provided. It is, therefore, impossible to summarize the distribution of these products based on the responses received.

New Students' Use of College Guides

Guides		New Freshmen 670	New Transfers 881	Total New Students 1,551
The College Handbook	N	185	99	284
(The College Board)	%	27.6%	11.2%	18.3%
America's Best Colleges	N	157	88	245
(U.S. News & World Report)	%	23.4%	10.0%	15.8%
Peterson's Guide to 4-Yr Col	N	100	70	170
(Peterson's Guides, Inc.)	%	14.9%	7.9%	11.0%
MONEY Guide to Best Col Buys	N	75	41	116
(MONEY Magazine)	%	11.2%	4.7%	7.5%
American Univ & Colleges	N	49	58	107
(Modoc Press)	%	7.3%	6.6%	6.9%
Profiles of American Colleges	N	59	48	107
(Barron's Educational Serv., Inc.)	%	8.8%	5.4%	6.9%
The College Blue Book	N	43	39	82
(MacMillan Publishing Co.)	%	6.4%	4.4%	5.3%
Lovejoy's College Guide	N	33	44	77
(Simon & Schuster/Monarch)	%	4.9%	5.0%	5.0%
College Planning Search Book	N	33	28	61
(ACT)	%	4.9%	3.2%	3.9%
The Right College	N	24	24	48
(Simon & Schuster/ARCO)	%	3.6%	2.7%	3.1%
Comparative Guide to Am Colleges	N	21	16	37
(Cass & Birnbaum)	%	3.1%	1.8%	2.4%
College Admissions Data Hndbk	N	18	16	34
(Orchard House)	%	2.7%	1.8%	2.2%
Chronicle College Databooks	N	6	1	7
(Chronicle Guidance Pub, Inc.)	%	0.9%	0.1%	0.5%

Source: UMBC New Student Survey 1992.

Table 5

New Students' Use of College Guide Software

Software		New Freshmen 670	New Transfers 881	Total New Students 1,551
Guidance Information Systems	N	45	20	65
(Riverside/Houghton Mifflin)	%	6.7%	2.3%	4.2%
How Choose Right College	N	25	23	48
(Educ. Information Systems, Inc.)	%	3.7%	2.6%	3.1%
Scan IV Col Search	N	22	18	40
(Nat'l Education Software Service)	%	3.3%	2.0%	2.6%
COIN Education Products	N	9	6	15
	%	1.3%	0.7%	1.0%
U Wisconsin Career Info Service	N	5	3	8
	%	0.7%	0.3%	0.5%
Wintergreen Software, P.A.R. Inc.	N	1	2	3
	%	0.1%	0.2%	0.2%

Source: UMBC New Student Survey 1992.

Table 6

New Students' Top Choices

Guides/Software listed as among "top three...in terms of quality and usefulness":

	New Freshmen	New Transfers	Total New Students
Number who listed any:	90	75	165
Percent of all respondents:	13.4%	8.5%	10.6%
America's Best Colleges (US News & World Report)	5.8%	2.3%	3.8%
The College Handbook (The College Board)	5.2%	2.5%	3.7%
Peterson's Guides and Software (Peterson's)	2.8%	2.5%	2.6%
Barron's Profiles of Amer. Colleges (Barron's)	2.4%	1.5%	1.9%
Money's Guide to the Best College Buys (Money)	1.8%	1.7%	1.7%
Lovejoy's College Guide (Orchard House)	1.2%	1.7%	1.5%
America's Univ. and Colleges (Madoc Press)	1.5%	1.2%	1.4%
The College Blue Book (MacMillan Publishing Company)	1.3%	1.0%	1.2%
How to Choose the Right College (SW)(Educ Info System)	0.9%	1.0%	1.0%
Guidance Information System (Riverside)	1.3%	0.6%	0.9%
The Right College (Simon & Schuster/ARCO)	0.7%	0.8%	0.8%
Scan IV Col.Search (SW)(National Educ Software Service)	1.0%	0.3%	0.6%
College Planning Search Book (ACT)	0.7%	0.5%	0.6%
Comp. Guide to Am. Colleges (Cass & Birnbaum)	0.6%	0.6%	0.6%
COIN (Orchard House)	0.6%	0.1%	0.3%
College Admissions Data Handbook (Orchard House)	0.3%	0.3%	0.3%

NOTE: Percentages may sum to more or less than 100 because not all respondents listed a product, and those who did may have listed up to three.

Source: UMBC New Student Survey 1992.

Table 7

Responses from Guidebook Surveyors

Guidebook Surveyors Surveyed:	Response
Harriet Scarry Chronicle Guidance Publications, Inc. Chronicle College Databooks	Letter: 1,173 MD customers
Irv Brechner, President Education Information Systems, Inc. How to Choose the Right College	Note: (99% to families)
Andrew P. Covell, Associate Editor The Riverside Publishing Company Guidance Information System (SW)	Phone call - 53 MD High Schools
James J. Murray, III, Director Division of Advancement, Membership and Publications American Council on Education American Universities and Colleges	Letter describing range of institutions
College Facts Chart, The National Beta Club College Facts Chart	Phone call: High Schools with Beta Club
Bruce A. Reynolds, Administrative Specialist Reporting Services Department, ACT DISCOVER College Planning/Search Book	Letter and list of Nine MD High Schools
Allan B. Corderman, Publisher, Orchard House, Inc. Guidebooks The Right College Lovejoy's College Guide 1992-93 College Admissions Data Handbook Software Wintergreen Software National Educational Software Services COIN Education Products University of Wisconsin's Career Information Service	Letter and general list
Thomas M. Wright, Senior Editor, The College Blue Book The College Blue Book	No response
James Cass, Max Birnbaum Comparative Guide to American Colleges Comparative Guide to American Colleges	No response

Table 8

Discussion

We had hoped, perhaps naively, to find a few clear winners and a few clear losers in these ratings of the college guides, which would allow us to focus our responding to their questionnaires. Instead, we found that none of the guides were used by all, and all of the guides were used by some! On the basis of the responses from high school guidance offices and a survey of new freshmen and transfer students, can we recommend a way to at least sort out "important" guidebook surveys from those less important? Probably not with any strong degree of confidence. At what rate of use should a guidebook be considered worthwhile? Does the possibility of even one student deciding to attend our institution based on an obscure or little-used guidebook justify the time we spend responding to its publisher? How much value is there in the image created by an entry in a guidebook in addition to its informational worth? The data reported here can inform discussions of these questions, but the answers are going to be institution-specific.

At our own institution, we used these results to prioritize our efforts and are considering a strategy for responding to (for us) "lesser" guidebook surveys similar to that being tried by other institutional research offices. The University of Massachusetts - Boston, for instance, is planning to move toward a general response handout for all but the "biggest" guides (College Board, Peterson's, Barron's, etc.). Along these lines, it may be a useful, and eventually efficient, effort for a group of institutional research offices (perhaps statewide) to collaborate in the development of a general profile to be used for any inquiries determined by the institutions as being "less important." In addition to the lesser-known and lesser-used guidebooks and software products, such a general-purpose profile could be used to respond to inquiries from businesses, peer institutions, and others.

The cooperation of a number of institutions in such a strategy helps to ensure that no one institution is under-represented, and, if methods of data collection are agreed upon, that the data provided are comparable between institutions, which is not the case with many guidebook surveys. The goal is to provide potential students relevant and accurate information, while allowing the institutional research offices to remain in the business of conducting research. We feel that, with a little assertiveness, this is possible.

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The Need for Public Colleges and Universities to Redefine Their Relationships with State Government

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Sixth MdAIR Conference
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Let me start with the basic assumption that drove St. Mary's College to devise new ways of relating to the State and new ways of financing higher education. We increasingly felt that public support is going to account for a smaller and smaller percentage of the budgets of Maryland colleges and universities, even when we get out of the current recession. This will become a more or less permanent condition, an unchanging context in which we are all going to have to operate. I say this for a number of reasons, well beyond the current recession.

With the full impact of the so-called "new federalism," the states are now experiencing a shift in terms of funding responsibilities. Many programs – food, nutrition, services to the homeless – have shifted to the state level. The Medicaid burden the states must bear has gone up about 15 to 25 percent in the last year or so. Most of us expect these increases to continue, at least in the short term . In addition, the states have not yet confronted the disintegration of their cities, the problems in primary and secondary education, the hopelessness of the poor, and the whole plight of the homeless and dispossessed.

My point is that these urgent needs are going to dominate the agenda of most states throughout the country for the next several years. These issues are so compelling that they are going to jostle public higher education, and, to a lesser extent, private, from its privileged position vis-a-vis state funding. Maryland is a case in point. In fiscal year 1992, Maryland's deficit before mandated reductions was $650 million; this year the deficit is about $1 billion. Maryland's support of public four-year colleges and universities has declined about 18 percent in the last two years. I am not at all sure that the prospect for the future is anything that we can be very cheerful about.

A year or so ago Bill Ratchford, who is Director of Maryland's Department of Fiscal Services, and who has a good track record projecting state revenues and expenditures, projected that State revenues would increase by about 6 percent over the next five years, while expenditures would go up about 7.5 percent. His point was that, even with new taxes, the State would not be able to fund the $550 million in approved plans for higher education. The money was not going to be there. It was that simple. Certainly all public institutions recognized this, and we at St. Mary's recognized this. We had the choice of watching State funding as a percent of total budget decline year by year—and watching the sure erosion of the quality that we had achieved—or we could devise new ways of relating to the State and new ways of financing public higher education.

I'd like to talk about the direction that St. Mary's College has taken and the fact that both the public colleges and their students are going to have to carry a heavier financial burden. Private sector fundraising is certainly going to play a much larger role in the future of public institutions, and particularly in the lives of the presidents of those institutions. But beyond that it is also true that tuition and fees in public colleges and universities are going to have to be increased, and rather dramatically. It is not an acceptable alternative in public higher education to say that we are not going to raise tuition and fees and we are proud of not raising tuition and fees, as we watch the quality of education being diminished year by year. That is a cop out. That is too easy because we are as much a source of excellence as institutions in the private sector. That seems to me to be the importance of public higher education.

The large increases in tuition and fees will have important public policy ramifications. Since the 1950's public higher education has been built around access, around affordability for those who merit admittance. It is extraordinarily important, and I can't stress this enough, in a democratic society that public colleges and universities remain accessible.

For the most part, current tuition practices in public institutions around the country reflect bad public policy, and those practices will have to be changed. Let me give you some numbers. During the past ten years the average tuition and fees at four-year public colleges has risen by a thousand dollars—only a hundred dollars per year. On the other hand, the average tuition at four-year private colleges rose by over $4,500. Increasingly, states have subsidized the cost of public higher education at a higher and escalating rate. For those who can't afford full cost that makes sense. That is sound public policy. But it makes no sense for the state to subsidize the cost of public higher education for those who are able to bear a charge more closely reflecting full cost. Given the pressing pulls on state funds, it seems to me that it is unconscionable to do this. It is unconscionable for the state to be subsidizing the affluent who will use that subsidy for a vacation home, a third car or, let me be entirely glib, a trip to Europe. I don't like that and I don't think it is good public policy.

In many ways the St. Mary's College student body is fairly typical of many public colleges. Current tuition at St. Mary's is $3,000 a year. That is comparatively high, among the highest of all public colleges in the country. That tuition covers about 30 percent of educational costs. As a liberal arts college with only undergraduates, we compare ourselves in terms of quality with Bates, Colby, Gettysburg, and Franklin and Marshall. Our tuition is $3,000. Their tuition is about $16,000 and it doesn't cover full cost. There is a problem there and it is a problem that we have ducked for far too long. The median income of students at St. Mary's is now about $65,000. A significant number of parents of current St. Mary's college students (about a fourth) have family incomes of over $100,000 and in some cases over $250,000. We must, it seems to me, ask those families to pay a larger share of the cost of the education that they are receiving at St. Mary's. On the other hand, it is very important that the large number of students who can't afford the tuition increases be protected. And I think we in public higher education can learn from the private colleges. The private colleges, at least many of them, have operated under the rubric "guaranteed to meet need" and in a sense, that is what the public colleges must do. It should be the credo of public colleges that if you are good enough to get into a public college, somehow the money must be found so that you can attend.

This is a long prelude to the St. Mary's College legislation. That legislation, somewhat amazingly, won almost unanimous support from the State Senate and the House, and last April was signed into law by the Governor. It is a proposal which emerged out of a recognition that the College's relationship to the State, both in terms of finances and in terms of governance, must change, and must change radically. So let me describe the major parts of that bill.

First, the College is to be given, and was given, a general fund appropriation for FY93 of $10.6 million. That general fund appropriation will be indexed in all succeeding years to the "implicit price deflator" for state and local governments. What does that mean? It means that the State investment is really a kind of endowment for us now. The State investment in St. Mary's will be adjusted for inflation, and inflation only, for all succeeding years. The State will fund no new initiatives. It will fund no new faculty and staff. That is the responsibility of the institution. Anything new, any enrichment, must be the responsibility of St. Mary's College. What we will get in exchange, however, is a kind of financial predictability. The sort of predictability that public institutions have never had. We will not be victimized by every blip in the economy. We will know over a five-year period what our State support is going to be. That is invaluable and, I think, a real breakthrough for public higher education, at least for St. Mary's.

The second piece of the legislation is that tuition will be increased by $500 a year for the next five years. Last year, when this bill went into effect, our tuition was $2,500 a year. In five years it will be doubled to $5,000 a year. It is still a remarkable bargain in relationship to the private sector. From those new tuition revenues and from private sector fundraising we expect to put another $600,000 to $800,000 aside for financial aid. Anything less is a violation of the mission of St. Mary's College. And that mission, at least as this administration has seen it for the last nine years, is that we will achieve academic excellence and we will build it in a kind of diversity seldom found in private liberal arts colleges throughout the country. We are committed to a kind of socio-economic diversity which you almost only find in public institutions, and we are committed to a racial diversity that is seldom if ever seen in four-year colleges.

Let me give you an example. Most private colleges with which we compare ourselves have somewhere between two and four percent of their student body African-American. St. Mary's College is over 12 percent African-American. We are very proud of that diversity and that is a part of what we are. We also have socio-economic diversity. We want those blue collar kids, those first generation students who come to St. Mary's. I want to tell you a wonderful story about two of our students. Our valedictorian was an inner city kid who came to St. Mary's with SAT's of 780 and graduated with straight A's over four years. The Maryland Honor Student of the Year, selected from all the colleges and universities in the State of Maryland, was a St. Mary's College student, blue collar, and the first person in her family to go to college. These students are what makes public education, in my mind, so very exciting.

Third, the new legislation gives the College considerably more autonomy, more autonomy than any public college or university in the country. Beginning in FY94 we will no longer operate under the State personnel system. We will function under our own system, devised by us and approved by our Board of Trustees. In FY93 we devised our own procurement system and that, too, has now been approved by our Board of Trustees. Beginning in FY93 State funding coming to St. Mary's will come to us in four installments. Previously we have had to go to the State, as does every other public institution, with a budget. The Governor's analysts, the House analysts, the Senate analysts and every other bureaucrat in Annapolis told us you can't do this, you can't do that, too much in computers, you really don't need a philosopher, and so on and so on. They were telling us how to manage and lead our institution. This changes. We now go to them and say "This is how we spent the money. Hold us accountable." That is perhaps the most radical change that has taken place under this new legislation. When that happened a former trustee and now a member of the Board of Regents said to me "Free at last, free at last."

I would argue that, if the State were to live up to its commitments to St. Mary's College, the savings would be significant. And certainly this model, if you project it over the long term, will result in significant savings. Let me simply talk about a five-year period. Current State funding accounts for about 50 percent of our budget. In five years, under this new arrangement, it will account for 40 percent. The State now contributes $3.50 for every dollar a student contributes towards his or her education. In five years the State will contribute $1.50 for every dollar contributed by a student.

But I am not excited about this new legislation because I am saving the State a lot of money. That would be disingenuous. I am not excited simply because we have financial stability, a kind we have never had before, or that we have more autonomy. I think the real importance of this legislation is that, in an economy that is uncertain and an economic context where progress seems more and more difficult, we will continue to move forward with the same kind of certainty, and the same kind of speed that we have moved in the last ten or fifteen years. We have a major building program on campus. We expect to add 25 to 30 faculty over the next five to seven years. We expect to enrich every aspect of the institution. In a sense we are self-funding, with the help of the State, what the College called several years back "the proposal for national prominence," which fundamentally said that we are going to move to a faculty of 125 to 130 and enrich many parts of the College.

I guess the question to be asked, then, is what kind of an institution is St. Mary's? What have you become? Let me say in closing that I don't perceive this new status as privatization, the favorite buzz word now of journalists who write about higher education. We are a public institution. We are proud of being public and we are going to continue to be public. But we have become, in a way, a hybrid institution — one that is supported by public funds but one that has the autonomy and many of the financial burdens and liabilities of a private institution. And I would say we represent a direction, a possibility, that other public institutions should consider, because we can't stay where we are.

This excerpt from the keynote address from the 1992 MdAIR conference courtesy of a transcript provided by Washington College's audio-visual services.

Networks for Success: Using BITNET and Internet in Institutional Research

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Introduction

Many were introduced to the use of computer networks for institutional research by an AIR Professional File by Updegrove et al. (*Electronic Mail and Networks: New Tools for Institutional Research and Planning*) published in 1989. This pioneering work described how the networks could be used to improve communications by using e-mail. It also mentioned over 400 interest group lists and electronic newsletters such as the Electronic AIR. Now there are over 2,000 group lists. New software tools have been created to allow world-wide searching and retrieval of information. These developments led to this new look at the use of BITNET and Internet for institutional researchers.

Services Available on BITNET

BITNET services have expanded by the development of listserv software. Listserv or "list server" takes the idea of a mailing list and expands it to make possible a wide variety of group communication tools including newsletters, electronic journals, discussion groups, and a limited file searching retrieval capability. The best introduction for institutional researchers to this new BITNET is a paper by Dennis Viehland, "A Resource Guide to Listservers, BITNET, Internet and Usenet" that was presented at the AIR Forum in 1991. (The paper can be retrieved electronically over BITNET by sending the command "Get Listserv Guide" in the body of an e-mail message to Listserv@ARIZVM1.) Viehland's paper reviews the functioning of the listservers and describes how to subscribe to newsletters, electronic journals and discussion lists or groups. He also includes a most useful section on "netiquette", the polite do's and don't's of using BITNET. Viehland's paper is the place to start your adventure with BITNET; retrieve a copy of his paper, review his list of newsletters and discussions groups, and sign up for one or two. You will be surprised how fast you catch on and how useful listservers can be.

Among newsletters the best is the newly renamed *Electronic AIR* edited for AIR by Larry Nelson.(Send a message to Larry at Nelson_L@PLU telling him you want to receive the *Electronic AIR*.) Larry covers many topics in this bi-monthly publication; news of the profession, announcements of conventions and meetings, reviews of books and articles and data availability from the federal government. Most useful, if you have a question for other institutional researchers, you can send it in an e-mail to Larry and 1,200 subscribers will see it in the next issue. One can get a lot of feedback quickly using the *Electronic AIR*. Often on a hot topic the requestor will summarize the responses and Larry will print it in the next edition. Other useful newsletters for institutional researchers include *SCUPNEWS* and the *NACUBO E-Mail Forum*. (See Viehland paper for details.)

Currently there are no electronic journals that directly relate to institutional research though the number of this specie of group communication grows every month. In general these electronic journals function just like their print counterparts, that is, articles are submitted, peer reviewed and then published. Most are distributed electronically, though one or two of them are also printed on paper. Michael Strangelove at the University of Ottawa has compiled a Directory of Electronic Journals and Newsletters that is published by the Association of Research Libraries. It is available in two parts from listserv@UOTTAWA. (Command: Get EJOURNAL1 Directory and Get EJOURNAL2 Directory). The Association has recently released an update which includes over 1,100 discussion lists in addition to the journal and newsletter compilation (Directory of Electronic Journals, Newsletters, and Academic Discussion Lists; call 202-296-2296 for information.) An institutional researcher might gain a few points with faculty if this information was passed along to the right people.

Discussion lists or groups are the most prevalent form of group communication using listserv software on BITNET. There are literally hundreds of discussion groups covering almost any topic imaginable. Viehland has a good, if somewhat out of date, list of institutional research/higher education administration groups. A person subscribes by sending an e-mail message to the proper listserv (example: Subscribe TQM-L Merrill Pritchett sent to listserv@UKANVM); but instead of receiving an occasional newsletter or e-journal one receives any message that any member of the discussion group cares to send. One can send messages to an entire list by either replying to a previous message or by using the send command in the mail utility. In this instance the listserv software acts as postal person delivering the mail from one member of the group to all others.

Some discussion groups are moderated, that is the list owner reads the submissions and culls out those that are inappropriate for the list or those that are excessively emotional. Others simply let the good times roll. Some lists are very active. It is not uncommon for 30 or more e-mails a day to be sent out over the registrars list. This heavy traffic can lead to some very interesting discussions but can also take up a lot of time. However, e-mail messages can be easily deleted or filed away for reading at a later time. In addition recent changes in the listserv software will soon allow list-owners to compile the traffic for a week or a month and distribute it at one time in the form of a digest that will cut down on the number of e-mail interruptions one gets.

There is a *Directory of Academic E-Mail Conferences* edited by Diane Kovacs of Kent State that lists the discussion groups available on BITNET. It comes in five parts and can be retrieved from Listserv@KENTVM by the Get command. The most useful part to institutional researchers is the last one, Acadlist File5. (Get Acadlist File5). The New-List @NDSUVM1 announces new discussion groups and also handles queries about the possible existence of discussion groups. (Send subscribe command to Listserv@NDSUVM1.)

The listserv software also allows a list owner to store text files on the group's listserv. To determine what files are stored on the listserv one sends the Index command. Upon receiving the index of files one can then e-mail the command Get "Filename" and the requested file will be sent automatically, if at a latter time, to the requestor. Eventually some of the lists will make papers presented at professional meetings available in this way. Ideally papers would be put on the listserv before the meeting so that participants could have already read them. A real give and take session then could take place during the formal presentation. Will MdAIR be the first to do this?

The listserv software also allows a limited database search on archived files. The process is cumbersome. It operates on key words and faintly resembles IBM job control language in structure. Fortunately there is a discussion group, LDBASE-L@UKANVM, to help with questions about the use of this database function of listserv.

Internet: The Better Alternative

By its very nature BITNET does not lend itself to the kind of database storage, search, and retrieval functions that institutional researchers need. Newsletters, e-journals and discussion groups can be helpful, but they do not let a researcher comb the vast databases that exist on hundreds of academic computers world-wide. To locate such data or information one must enter the world of the Internet.

The Internet is vastly more complex than BITNET and it holds much more promise for use by institutional researchers. The Internet is more complex because it runs on the Unix operating system; it is not user friendly. Before 1993 information about the Internet was only available on the Internet itself or from helpful academic computing centers. Progress! So far this year three commercial publishers have brought out Internet books. The most comprehensive work is Ed Krol's *The Whole Internet: Users Guide and Catalogue.* The book will tell you all you wanted to know about the Internet itself and more importantly introduce you to some potentially powerful tools.

Like BITNET, the Internet has e-mail and discussion groups, called newsgroups. These Internet functions are more flexible and powerful than those on Bitnet. For example one can e-mail binary data through the Internet, speeding up the process considerably compared to sending ASCII data. Internet newsgroups, known collectively as USENET, are like personal computer "bulletin boards"; one doesn't get mail, one reads the newsgroup of one's choice; one doesn't send mail but rather one posts messages to the newsgroups. Both e-mail and newsgroups are more complex than their BITNET counterparts but *The Whole Internet: User's Guide & Catalog* helps bridge the information gap.

The Internet has features impossible on BITNET. Using Telnet one can log on to a remote computer anywhere in the world, as long as one has an account on that machine and the computer is connected to the Internet. FTP allows the moving of files back and forth across the Internet, including binary data, much faster than through BITNET. Many Internet hosts or computers maintain public directories containing files that anyone can copy to their local computer through what is called Anonymous FTP. For instance, some sites have pc software in their public directories that can copied back to the user's host computer. (Warning: One must not FTP copyrighted software and viruses are not unknown in freeware or shareware.)

The big problem with Internet is its size. How does one locate the data file, the public domain software, or database that one has heard of but does not have the slightest idea where the desired material resides? Archie is the answer. Archie allows one to search the Internet—about 1,200 servers and over 2 million files—for data, programs or text files kept on public servers. Krol in *The Whole Internet* has an excellent discussion of how to use Archie. Telnet to info.umd.edu and login as gopher. From the menu select "other systems," then select Archie from the new menu. Type in "help" and then decide what kind of search you want to do. Archie works by matching the pattern of a filename or other string. Once the proper file is located it can retrieved by using FTP. Archie can also be used by e-mail and, best of all, you may have Archie installed on your campus computer.

Also available by Telnet at info.umd.edu is Gopher. Where Archie looks for files or programs by name, Gopher searches by subjects. Gopher, unlike Archie, is menu driven and much easier to use. Gopher allows you to browse through the Internet the same way one could use the subject listing in the card catalogue, though in the case of Gopher the library and the card catalogue might be in another state or another country. Gopher not only locates the material on your subject but it will retrieve it for you! Currently there are over 100 Gopher sites across the Internet and more are being added all the time.

The downside to Gopher is that there are no standard subject headings across the many sites. Each Gopher has its own way of organizing the subjects on the server; there is no standard arrangement like the Library of Congress subject headings. The material one might be looking for could be listed under Higher Education-Finance at one Gopher site or Higher Education-Budgeting at another.

The Wide Area Information Server (WAIS) is another Internet search and retrieval tool. WAIS searches indexed online files for particular words or groups of words and gives you a list of online files that contain the words. Currently there are over 250 free WAIS on the Internet, including the one at info.umd.edu. Some WAIS, like the Dow-Jones Information System are private and one must pay a fee to use them. (See Krol's *The Whole Internet* for directions and cautions on using WAIS.) WAIS, like most of the Internet tools under discussion, is the result of volunteer work by librarians and computer professionals at a myriad of academic institutions. There is a lot of variety and some interesting idiosyncracies among WAIS servers.

The newest information service on the Internet is the World-Wide Web or WWW. The Web is a hypertext tool. Quoting from the overview of the Web at CERN in Switzerland,

> The World Web is a wide-area hypermedial informational retrieval initiative aiming to give universal access to a large universe of documents.

CERN is the European Particle Physics lab and the Web was designed by them to meet their information retrieval needs. Nonetheless the "large universe of documents" includes material on subjects from aeronautics to geography and from U.S. politics to religion. Hypertext is a method of organizing information so that selected words in a text can be expanded upon at any time to bring in other information about the word. These selected words are links to other documents that might be text files, pictures, or anything. For instance, perhaps one was reading about the European discovery of the western hemisphere and came across the name Columbus. With hypertext one could call up biographical details of Columbus's life or get a picture of the Santa Maria. (Telnet to info.umd.edu, login as Gopher, select "other systems" from the menu and then chose the World Wide Web for a sample.)

Archie, Gopher, WAIS, and the Web hold out promise as future useful institutional research tools. Archie can help locate pc software, and Gopher is good for doing a literature search for a research projects. There is not much institutional research material on the free WAIS and the private ones are expensive. The Web is brand new and its usefulness for institutional researchers is hard to judge. Research offices need to work with their libraries and computer centers to get relevant material and data placed on the various servers. State and federal governments should put their documents and data on Archie, Gopher or WAIS servers. Imagine how useful it would be to have IPEDS on an Archie, Gopher or WAIS server! How helpful would it be to have the contents, not just the listing, of ERIC on a hypertext server like the Web?

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Milestones and Memories: A History of MdAIR

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Seventh MdAIR Conference
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At lunchtime on a winter day early in 1986, two colleagues met for lunch at the Rossborough Inn in College Park.

Marilyn Brown, director of the Office of Institutional Studies at the University of Maryland College Park, had been thinking for some time about the possibility of uniting institutional research professionals into a statewide organization. She had even discussed it with colleagues at the Association for Institutional Research Forum in Portland the year before. But there never seemed to be enough time to do anything about it.

Ron Maggiore was director of institutional research at Bowie State College. He had been invigorated by the meetings with his counterparts at the other "Board" institutions (the institutions comprising the Board of Trustees' State Colleges and Universities) during the previous year, where they worked together to implement a new information system. Recent meetings at the State Board for Higher Education allowed him to also meet colleagues from other segments of Maryland higher education. He saw the great benefit of being able to discuss common problems with institutional researchers from other institutions in the state. These discussions filled a void left by the regional associations, NEAIR and SAIR, whose focus always seemed to be just a little too far north and south of Maryland to be truly relevant. When Ron learned of Marilyn's common interest in formalizing the gathering of researchers in the state, he said (as only Ron would say), "Let's do lunch." And they did.

Marilyn and Ron realized that the first step in undertaking such a monumental task as forming a statewide organization of institutional researchers was to assemble a strong team of IR professionals representing each segment of higher education in Maryland. They decided on their initial invitations based on people they knew through professional activities, including AIR membership. In May Marilyn contacted Pat Haeuser, IR director at Anne Arundel Community College, and Kathy Farnsworth, IR director at Hood College. Both agreed to join the cause. However, the group didn't meet formally until the following year.

In early February, 1987, Marilyn received materials from Horace Griffitts of the national Association for Institutional Research's Associated Groups Committee, which gave suggestions and examples for organizing state groups. Marilyn and Ron contacted Pat and Kathy, and the group, chaired by Marilyn, met at Bowie later that month.

A lot of anxieties surrounded this first meeting. The Maryland Community College Research Group (MCCRG) had been a strong and active association for over 15 years, and some of its members worried that the concerns of two-year institutions might be lost in the agenda of the proposed Maryland AIR if there was too much influence by the four-year institutions. Likewise, members of the four-year institutions feared being outnumbered by the community college segment, and some wondered if the strength of the MCCRG might overpower the new association. Many of the private institutions didn't even have IR offices and those that did had had little contact with IR professionals from other segments.

When the committee members met, they found that all shared in the concern that the proposed organization take into account the views of all segments equally. Any fears were quickly abated by the respect they found for each other and their enthusiasm for the idea. The committee agreed that the primary focus of the organization should be institutional research, but that non-IR professionals involved with IR through planning, budgeting, or other functions, should be welcomed. Representation of all segments of higher education on future steering committees should be ensured. It was also agreed that the geographic focus should be on Maryland. The group discussed having a one-day conference in October or November—a very short time frame for planning. Two other hotly debated topics at that meeting were the appearance of the Maryland AIR logo (big M, little d, big AIR) and where to go to lunch. The tone of this meeting—the hard work and respect, plus lots of fun—would carry through all subsequent MdAIR meetings.

The committee members quickly compiled mailing lists of potential members from their segments, and Kathy, exhibiting early secretary-treasurer traits, coordinated the list and mailings.

Early in April, Marilyn applied for a start-up grant of $300 from AIR, which was awarded. A couple of weeks later, letters were sent to individuals on the mailing list announcing that a room and time had been set aside at the national AIR conference in May (in Kansas City) for a get-together to discuss the potential organization. Meanwhile, the steering committee was expanded to include Sam Helms, IR director at Towson State University, Dan McConochie, IR coordinator at the State Board for Community Colleges, and Paul Davalli, IR director at the University of Maryland at Baltimore.

Maryland attendees at the Kansas City Forum expressed enthusiasm for the MdAIR idea. They discussed the possibility of a fall conference, and the need for a constitution and by-laws.

The full steering committee met at Anne Arundel Community College on June 10, 1987, and planning began in earnest for the first MdAIR conference, given the theme, "Getting Started in Maryland." The logo had a bicycle pump attached to a half-inflated "MdAIR." Over the next five months, arrangements were made, speakers were scheduled, and presenters coerced. Sam Helms recalls the committee's anxiety of wondering whether anybody would show up. After about 50 pre-registrations were received, though, they knew that the conference would be a go.

On November 13, 1987, the first MdAIR conference was held, at Bowie State College. Laslo Boyd, then an executive assistant to Governor Schaefer, provided the keynote address, discussing the proposed reorganization of higher education in Maryland. A reaction was provided by Robert Berdahl, a College Park professor and noted authority on statewide coordination of higher education. Three concurrent sessions were presented in the afternoon. The details and formalities of a proposed constitution and by-laws, future conference plans, officer elections, and special interest groups, were discussed at the business meeting later in the day. In all, seventy-one people attended the conference, and it was a pretty good day, judging by the conference evaluations!

The organization began to gain a momentum of its own. Members of the committee, with the help of Freeman Galoff (Cecil Community College) and Leonard Garlick (Board of Trustees of State Universities and Colleges), worked on the MdAIR constitution and by-laws. Special interest groups (SIGs) were formed and met on their own. In May of 1988 fifteen Marylanders attend a MdAIR-sponsored lunch at the AIR Forum in Phoenix. Meanwhile, the Local Arrangements Committee for the 1989 AIR Forum in Baltimore, comprised mostly of MdAIR members, began working together.

On November 11, 1988, the second MdAIR conference was held at the University of Maryland Baltimore County, and attended by sixty-one members. Guest speakers Anne-Marie McCartan, Virginia Council of Higher Education Systems, and Ed Delaney, George Mason University, discussed an idea that many of us had heard about but few were involved in yet: student outcomes assessment. Five concurrent sessions were offered. The MdAIR constitution and by-laws were passed at the business meeting, specifying the procedures for the first election of officers the following year.

During the winter and spring, the Local Arrangements Committee for the AIR Forum in Baltimore became increasingly busy. One of the most memorable events for MdAIR member, and later president, Paul Davalli, was making the arrangements for the special event held at the B & O Railroad Museum. "Getting the buses lined up, the location selected and catered, and the entertainment chosen, plus all the other details that go into the arrangements was exciting but something that you wouldn't want to do on a regular basis. Taking a chance on a cheap but not altogether reliable bus service was the biggest risk, but it worked out fine." This challenging experience brought a special cohesion to the group.

In July 1989, the call for nominations for the inaugural Executive Committee was sent to the membership. The first elected Executive Committee, announced at the

November 17, 1989 conference at Essex Community College, included Ron Maggiore, President; Pat Haeuser, President-Elect; and Dan McConochie, Secretary/Treasurer. Marilyn Brown, in recognition of her efforts in chairing the steering committee that led to MdAIR's founding, was invited to serve on the first Executive Committee with the honorary title of Past President. The first elected segmental representatives were: Craig Clagett, representing public community colleges; Melissa Gilbert, independent colleges; Sam Helms, public comprehensive; Nancy Ochsner, public doctoral-granting; and Robin Huntington, non-campus-based institutions. Sixty-eight attended the conference, where Shaila Aery, Secretary of Higher Education in Maryland, provided the keynote, discussing accountability and assessment.

May 1990 was a busy month for MdAIR. It co-sponsored a conference on assessment at Towson State University with the Maryland Association for Higher Education (MAHE); it became formally affiliated with AIR; and members attending the AIR Forum in Louisville got together for a fun dinner at the revolving Flagship restaurant on the top floor of the hotel. Paul Davalli and George Ossman joined the group a little late, after a busy afternoon at Churchill Downs. The highlight of the dinner occurred about halfway through when George discovered that it wasn't just him—the restaurant really was spinning! All laughter was silenced, however, when the checks came.

On November 9, 1990, MdAIR's fourth conference was held at beautiful Hood College. Sixty-six people enjoyed six sessions, in addition to a presentation by Gerald McLaughlin and Karen Miselis, in which they discussed evaluating the effectiveness of institutional research.

The following May, in tough budget times, few MdAIR members managed to attend the national AIR Forum in San Francisco. Only three (Craig Clagett, Kathy Farnsworth, and Helen Kerr) attended the scheduled MdAIR meeting. Craig and Helen kept up the tradition of the MdAIR dinner, drinking a toast at the Corona Bar and Grill to their missing mates.

The different MdAIR special interest groups (SIGs) had been meeting with varying regularity. One of the more active ones during the early years of MdAIR was a SIG on Assessment. Melissa Gilbert, from Goucher, had been an energetic leader of the group, which had perhaps forty MdAIR members participating at one point. The group had been instrumental in the co-sponsorship of the assessment conference with MAHE. Unfortunately for Maryland, Melissa left the state in 1990, and eventually even this active SIG went into hibernation. One of many great ideas that Pat Haeuser, who was elected president for the 1990-91 term, had was to give all the SIGs a "shot in the arm" by holding a summer meeting. The "Summer SIG Spectacular" would be expressly for the purpose of members getting together with SIGs in an informal setting. Pat wrote a proposal for and received an AIR Program Support Grant of $350. The session was held at Anne Arundel Community College in July, and was attended by forty-six members. It was so successful, generating ideas and sessions for the fall conference, that it would become a tradition, characterized by casual dress, loose structure, and a free lunch to members!

A sad note to the Summer SIG Spectacular was the announcement that Ron Maggiore, who had been co-founder of MdAIR with Marilyn Brown and so respected by colleagues to have twice been elected President, was leaving Maryland. As Ron was then President-Elect, a special election was needed to fill the presidency for the following 1991-92 year. Craig Clagett of Prince George's Community College was elected and began his term at the conclusion of the fifth annual conference, which was held at Towson State University on November 15, 1991. Sixty people attended.

A landmark for MdAIR that occurred at this conference was the distribution of Volume I of *Maryland 2000: Journal of the Maryland Association for Institutional Research*. Craig had made the initial suggestion that MdAIR publish a journal, so he ended up its editor. The journal, a collection of seven papers from the previous four MdAIR conferences, was designed and produced on desktop publishing by Pat Diehl of Prince George's Community College.

In February 1992 Marilyn Brown passed away. Colleagues and friends had marveled at her stamina and continued activism in state and national associations, in addition to her regular job responsibilities, during her long and difficult struggle with cancer. The MdAIR Outstanding Service Award was established and named for Marilyn. Its purpose would be to "recognize members and former members who have made extraordinary and sustained contributions to the Maryland Association for Institutional Research," and it was awarded to Marilyn posthumously at the Fall 1992 conference. The executive committee also approved a donation to the Marilyn Brown Memorial Loan Fund of the University of Maryland College Park as the form of the first award.

In May eight MdAIR members attending the national Forum in Atlanta gathered once again for a dinner, and in July, the second annual MdAIR Summer SIG Spectacular was held at Hood College, with forty-seven attending. The SIG meeting was once again very successful, contributing greatly to the record twelve sessions offered at the next fall conference at Washington College. At this conference keynote speaker Edward T. Lewis, President of St. Mary's College of Maryland, discussed "The Need for Public Colleges and Universities to Redefine their Financial and Structural Relationships with State Government." The attendance reached a phenomenal 105! Perhaps another tradition was started at this conference when the "MdAIR Players" performed a skit, based on a play written by the "Rocky Mountain IR Players" and titled, "IR Can Be Trying!"

Along with the hidden talents of some previously-thought-to-be-shy members of the MdAIR Players was discovered the song-writing ability of Kathy Farnsworth (with some help from her friends). She established another tradition of serenading MdAIR presidents as they finish their terms, and colleagues who leave (or return to) the state, with such renditions as, "Craiggy Boy," "Runaway Pat," and "Michael's Back." A fine artistic tension results from the embarrassment of the serenaders and the serenadees. After six years the Executive Committee still regards having fun as an essential goal of the association.

As the members of the initial steering committee hoped it would, the organization is now growing beyond the people who nurtured it. It is an adolescent, finding it's own direction, and taking on character and function that is not controlled by individuals. An important step in its evolution occurred in April 1993, when Merrill Pritchett, at the University of Baltimore, set up an electronic discussion list on the UB Listserver for MdAIR members. The MdAIR-List attracted about twenty subscribers in its first month, and will surely become an important communication tool for MdAIR members as more institutions make communication networks available to employees.

This really brings full circle the reasons that Marilyn and Ron first got together, the purposes of the Maryland Association for Institutional Research, which were to provide "1) for the fostering of unity and cooperation among persons having interests and activities related to institutional research...; 2) for the dissemination of information and the interchange of ideas on topics of common interest; and 3) for the continued professional development of individuals engaged in institutional research." The early days of the association were remarkable in their freedom from pettiness and competition, and built a strong foundation of "unity and cooperation" on which to grow.

The memories and records of several MdAIR members, especially steering and executive committee members, were crucial in the recording of this history. I wish to thank them for their enthusiastic cooperation. RBH

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Previous MdAIR Publications

Maryland 2000: Journal of the Maryland Association for Institutional Research
Volume I (Fall 1991). Edited by Craig A. Clagett

Contents: **"Environmental Scanning: Assessing Local Business Training Needs"** (Craig A. Clagett and Robin B. Huntington); **"Student Outcomes Performance Accountability Reports: A Prototype"** (Craig A. Clagett); **"Accountability and Assessment in Maryland Higher Education"** (Shaila R. Aery); **"Taxographic Space: A Radically Different Paradigm for Information Management"** (David A. Webb); **"Selecting Tools for Institutional Research"** (Robin B. Huntington); **"When an Institutional Researcher Needs a Statistical Package—and More"** (Merrill R. Pritchett); **"Staff Attitudes Toward Outcomes Assessment"** (Martha A. Matlick).

The Institutional Research Practitioner: A Guidebook to Effective Performance
Craig A. Clagett and Robin B. Huntington. (1990)

Chapters: **Defining Institutional Research; Selecting Tools for Institutional Research; Presenting Findings to Management; Maximizing Office Productivity; Increasing Institutional Research Staffing.**

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